Appendix 1A: Individual Comments Received by U.S. EPA

First public comment period: April 29, 2021 to June 30, 2021

And

Second public comment period: September 1, 2021 to October 1, 2021

From: [redacted]
To: tera.fong@epa.gov
Cc: pfeifer.david@usepa.gov; Keclik, Donna; Proto, Paul; cholm; tgeshick.boisforte-nsn.gov; Robbie Goggleye; Shane Drift; David Morrison; Peter Boney; Travis Morrison
Subject: letter regarding MPCA Impaired Waters list
Date: Friday, April 23, 2021 9:56:51 AM
Attachments: [redacted]

Attached is a letter from Chairwoman Chavers regarding MPCA Impaired Waters list.

VICTORIA VILLEBRUN
Senior Executive Assistant
Bois Forte Tribal Government
5344 Lakeshore Drive
Nett Lake, MN 55772
218-757-3261
vvillebrun@boisforte-nsn.gov

Bois Forte
TRIBAL GOVERNMENT

Tera L. Fong, Water Division Director
United States Environmental Protection Agency
77 West Jackson Boulevard
Chicago, Illinois 60604

April 20, 2021

Dear Tera L. Fong:

The Bois Forte Band of Chippewa Tribal Council at Nett Lake/Vermilion, Minnesota, wishes to take the opportunity to thank EPA for responding to tribal concerns surrounding sulfate residuals in wild rice producing waters of the state, and for intervening and requesting inclusion of potentially sulfate-impacted wild rice water resources in the MPCA's 2021 Minnesota CWA Section 303(d) impaired waters list.

Bois Forte stands with other Bands throughout Minnesota in encouraging this action. We know that the true sulfate level to apply as a standard for protection of wild rice has yet to be determined, and that ongoing research is necessary to refine this level.

In the interim, we understand also that the current administrative standard for sulfate as it pertains to wild rice has been and remains 10 mg/l, and we are pleased that EPA chooses to accept and demand that the state of Minnesota apply that standard.

Through preceding years, numerous academic studies have attempted to characterize effects of sulfate residuals on wild rice germination and growth. Those studies show a wide range of acceptable sulfate levels, due, in our opinion, to the variety of experimental approaches used. New research shows interesting potential for sulfate accumulation in rice root systems, which may impact plant growth, even at lower levels. We have not yet seen these results duplicated, but undoubtedly the research continues.

Academia is traditionally inclined and encouraged to approach research in unique ways. While we appreciate the ingenuity and creative efforts being applied in wild rice research, the variability in approach does create confusion in interpreting results. This confusion in part opens the door to biased data use to support differing perceptions of sulfate fate in wild rice waters, and leads to subsequent confrontational positions being taken over industry actions and potential impacts.

5344 Lakeshore Drive | Nett Lake, MN 55772 | 218-757-3261 | 800-221-8129 | FAX 218-757-3312

As such, we suggest that EPA consider coordinating a long-term comprehensive approach to move this issue forward to a positive conclusion. We would like to see EPA coordinate and lead a scientific oversight panel. Panel members would review and develop standardized methods and processes to be used in focused, future studies of wild rice-sulfate interactions. Given the substantial biological and spatial variability inherent within the wild rice plant and environmental conditions under which it grows, it seems to us that method standards are essential to minimize potential experimental error, reduce environmental interaction variability, and reach a widely-accepted level of confidence in received results.

Were this accomplished, we think it would be manifest as a win-win situation; tribes could become more confident that a universally accepted, appropriate standard for sulfate is being consistently applied, and companies that produce sulfate as a by-product of industrial processes can accordingly adjust to a known, inviolable standard and be comfortable expending necessary funds for industrial modifications to ensure long-term environmental sustainability of our water and wild rice resource.

Thank you for inviting Bois Forte to meet and discuss this important issue with EPA. We appreciate your efforts and the opportunity to provide comments. Please call me at (218) 757-3261, or email me at cchavers@boisforte-nsn.gov if you have questions regarding our commentary provided on this issue.

Sincerely,

Cathy Chavers

Cathy Chavers, Chairperson
Bois Forte Band of Chippewa

Cc: David Pfeifer pfeifer.david@usepa.gov

Donna Keclik keclik.donna@epa.gov

Paul Proto proto.paul@epa.gov

Chris Holm cholm@boisforte-nsn.gov

Tara Geshick tgeshick@boisforte-nsn.gov

Robbie Goggleye rgoggleye@boisforte-nsn.gov

Shane Drift sdrift@boisforte-nsn.gov

David Morrison Sr. dmorrison@boisforte-nsn.gov

Pete Boney pboney@boisforte-nsn.gov

Travis Morrison tmorrison@boisforte-nsn.gov

CC/ceh

From: [redacted]
To: Proto, Paul
Subject: Fwd: My MPCA Class 2 comment FYI
Date: Saturday, May 1, 2021 5:21:19 PM

Good afternoon Paul - I didn't know who to send this to before; it probably belongs to you. My comment is first; if you can't access it, please let me know and I will send it a different way — thanks a heap

[redacted]

Begin forwarded message:

From: [redacted]
Subject: My MPCA Class 2 comment FYI
Date: April 16, 2021 at 4:43:55 PM CDT
To: Fong.Tera@epa.gov, pfeifer.david@epa.gov

https://minnesotaoah.granicusideas.com/discussions/37415-pollution-control-agency-request-for-comments/topics/submit-a-comment-187

Good afternoon Tera and David — I am requesting that either the MPCA or Region 5 EPA correct an error concerning wild rice protection that was made decades ago. Thank you. If you have any questions, please let me know.

[redacted]

REQUEST FOR COMMENTS on Planned Amendments to Rules Governing Water Quality Standards – Use Classification 2, *Minnesota Rules* chapter 7050, Revisor's ID Number R-04692

Thank you for the opportunity to provide comments on the MPCA's potential rule changes to Mn Rules Chapter 7050, Class 2.

The Clear intent of Class 2 and Class 4 language:

7050.0222 SPECIFIC WATER QUALITY STANDARDS FOR CLASS 2 WATERS OF THE STATE; AQUATIC LIFE AND RECREATION.

Subpart 1. **General.**

A. The numeric and narrative water quality standards in this part prescribe the qualities or properties of the waters of the state that are necessary for the **aquatic life and recreation designated public uses and benefits**.

7050.0224 SPECIFIC WATER QUALITY STANDARDS FOR CLASS 4 WATERS OF THE STATE; AGRICULTURE AND WILDLIFE.

Subpart 1. General.

The numeric and narrative water quality standards in this part prescribe the qualities or properties of the waters of the state that are necessary for the agriculture and wildlife designated public uses and benefits. **Wild rice is an aquatic plant resource found in certain waters within the state. The harvest and use of grains from this plant serve as a food source for wildlife and humans. In recognition of the ecological importance of this resource, and in conjunction with Minnesota Indian tribes, selected wild rice waters have been specifically identified [WR]** and listed in part 7050.0470, subpart 1.

Class 4A waters.

The quality of class 4A waters of the state shall be such as to permit their use for irrigation without significant damage or adverse effects upon any crops or vegetation usually grown in the waters or area, including truck garden crops.

The language in Class 2 is very clear - **The numeric and narrative water quality standards in this part prescribe the qualities or properties of the waters of the state that are necessary for the aquatic life and recreation designated public uses and benefits.**

Class 2 is written to protect aquatic animal and plant communities and ecosystems by protecting their water quality.

Class 4 is equally very clear – **The numeric and narrative water quality standards in this part prescribe the qualities or properties of the waters of the state that are necessary for the agriculture and wildlife designated public uses and benefits.**

Class 4 is written to protect agriculture and wildlife.

And Class 4A further describes the purpose of this class - **The quality of class 4A waters of the state shall be such as to permit their use for irrigation without significant damage or adverse effects upon any crops or vegetation usually grown in the waters or area, including truck garden crops.**

Class 4A is clearly written to protect commodity crops by protecting irrigation water.

My specific concern is directed at the language specific to wild rice in the Class 4 introduction - **Wild rice is an aquatic plant resource found in certain waters within the state. The harvest and use of grains from this plant serve as a food source for wildlife and humans. In recognition of the ecological importance of this resource, and in conjunction with Minnesota Indian tribes, selected wild rice waters have been specifically identified [WR]**

By reading the clear intent of the language in Classes 2 & 4, aquaculture-raised fish are protected in Class 4 and wild fish are protected in Class 2. In the exact same way, paddy-raised rice should be protected in Class 4 and wild rice should be protected in Class 2.

Wild rice belongs in Class 2, similar to the protection provided to wild fish. It was a mistake in the past to put wild rice protection in Class 4 that must be corrected in this rulemaking.

Wild rice is mistakenly described in Class 4 as a commodity equivalent to paddy rice; clearly wild rice is not a commodity. The MPCA language recognizes the valuable and important ecological attributes that wild rice plays as an ecosystem keystone community. This clearly belongs in Class 2 and must be moved there.

To that end I request that the MPCA move wild rice water quality standards, and its accompanying language from Class 4 to Class 2.

My background

I have a strong background in the areas of water quality standards and rules development and the role they play in meeting the mission of the MPCA. I have a Ph.D. in Water Resources from Iowa State University [ISU] with an emphasis on the relationships between nutrients and algae.

I am also a retired Professional Engineer, with a focus on ecological engineering. My engineering degree was from the University of Missouri – Rolla, previously named the Missouri School of Mines.

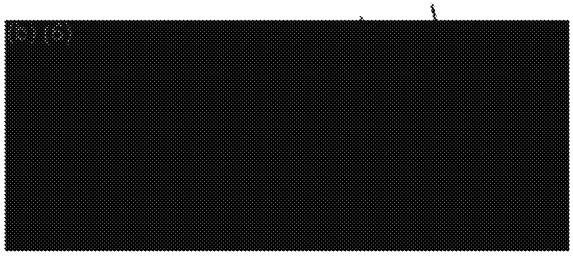
Subsequently, I worked for about ten years at the Missouri Department of Natural Resources, studying wastewater discharges on downstream water resources and the use of constructed wetlands for further cleaning wastewater discharges, as well as Mississippi River Basin planning.

I then was employed by the Minnesota Pollution Control Agency starting in 1990 and retiring in 2013. Over my 22+ years employment, I had numerous responsibilities, some of which are as follows:

- Algal ecologist
- Coordinated the development of the Total Maximum Daily Load [TMDL] Impaired Water List from 1997 to 2010
- Developed the statewide Mercury TMDL
- Used several complex large river water quality models, such as WASP and QUAL2e to study the Mississippi and Minnesota Rivers in the Metro area
- Worked on many water quality standards rule developments, including, as examples, the following: wetlands, Index of Biotic Integrity (IBI), lake and river phosphorus, and turbidity

Again, thank you very much for being given the opportunity to provide comments. I appreciate it very much.

Respectfully,



From: [redacted]
To: Proto, Paul
Subject: EPA MN Wild Rice Waters Article
Date: Sunday, May 9, 2021 2:25:49 PM

Mr. Proto,
The impaired waters article in the Quetico Superior Wilderness news was very interesting. In my opinion, EPA is blaming the wrong entities in the mining industry and tailings basins. The major players in this are baseload coal fired electric generating units in MN, ND, and SD. Ot;her major influential factors are farm chemicals (anhydrous ammonia, etc.) and automobiles. When we lived in Columbus, NE !979-1983) and Sioux City, IA (1983-1992), we could not drink tap water from early June to late October due to the over-application of agricultural fertilizers and pesticides. Bottled water was unheard of then. The Mississippi highlite is attributable to the Twin Cities metro. We lived in Shoreview from 1992-2000. I worked for Minnegasco as an economist and many summer days with an air inversion in place, the sky over the west metro was a brownish haze and I would cough all afternoon. Thank you for the opportunity to comment.
[redacted]

From: Keith Hanson
To: Proto, Paul
Cc: Tony Kwilas (tkwilas@mnchamber.com); RaeAnna Buchholz (rbuchholz@mnchamber.com)
Subject: Request for an Extension to the Comment Period - Minnesota 2020 Impaired Waters List
Date: Sunday, May 9, 2021 8:20:08 PM
Attachments: [redacted]

Paul,

On behalf of the Minnesota Chamber of Commence attached is a request to extend the Comment period to the end of June.

Keith Hanson
Minnesota Chamber of Commerce
Water quality Sub-committee Chair

Keith Hanson

Vice President
Senior Environmental Consultant
Minneapolis, MN office: 952.832.2616
cell: 218.590.2790
KHanson@barr.com
www.barr.com

MINNESOTA CHAMBER OF COMMERCE

GROWING MINNESOTA

May 7, 2021

Via Email

Paul Proto
proto.paul@epa.gov

RE: Public Notice of EPAs Addition's to Minnesota's 2020 Impaired Waters List

The Minnesota Chamber of Commerce (Chamber) is a statewide business organization representing approximately 2,300 businesses, many of which will be impacted by proposed EPA's listing of impaired waters in Minnesota. The Chamber intends to provide comments on this proposed action. However, based on the short timeline, the volume of materials to be reviewed and since this timeline period includes a national holiday the Chamber is requesting an extension of the comment period to June 30, 2021.

As indicated in the public notice there is extensive additional data and communications with the Tribal Governments that has been submitted and the regulated community needs time to review this information.

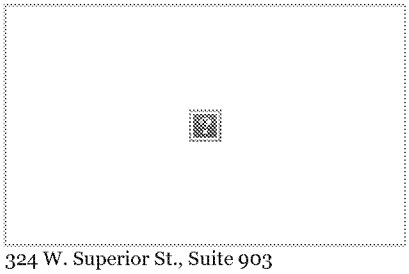
Tony Kwilas
Director, Environmental Policy
Minnesota Chamber of Commerce

From: [redacted]
To: Proto, Paul
Subject: EPA extension request
Date: Wednesday, May 12, 2021 12:24:24 PM
Attachments: [redacted]

Hi there -

Please find the attached letter.

Kelsey Johnson
President



324 W. Superior St., Suite 903
Duluth, MN 55802
Taconite.org

IRON MINING ASSOCIATION

May 12, 2021

Via Email

Paul Proto
proto.paul@epa.gov

RE: Public Notice of EPAs Addition's to Minnesota's 2020 Impaired Waters List

The Iron Mining Association of Minnesota (IMA) is a statewide business organization representing over 200 businesses, many of which will be impacted by proposed EPA's listing of impaired waters in Minnesota.

The IMA intends to provide comments on this proposed action. However, based on the short timeline, the volume of materials to be reviewed and since this timeline period includes a national holiday the IMA is requesting an extension of the comment period to June 30, 2021.

As indicated in the public notice there is extensive additional data and communications with the Tribal Governments that has been submitted and the regulated community needs time to review this information.

Sincerely,

Kelsey A. L. Johnson
President
Iron Mining Association of Mi

From: Elizabeth Wefel
To: Proto, Paul
Cc: [redacted]
Subject: Request for Extension of Comment Period
Date: Wednesday, May 12, 2021 3:35:27 PM
Attachments: [redacted]

Dear Mr. Proto,
On behalf of the Coalition of Greater Minnesota Cities, attached please find our request for an extension of the comment period for the EPA's additions to Minnesota's 2020 Impaired Waters List.

Best regards,

Elizabeth Wefel, Senior Attorney/Lobbyist
Flaherty & Hood, P.A.
525 Park Street, Suite 470
St. Paul, MN 55103
Mobile: 651-492-3998
Office: 651-225-8840
eawefel@flaherty-hood.com

COALITION OF GREATER MN CITIES

DEDICATED TO A STRONG GREATER MINNESOTA

May 12, 2021

Paul Proto
proto.paul@epa.gov

RE: Public Notice of EPA's additions to Minnesota's 2020 Impaired Waters List

Dear Mr. Proto,

On behalf of the Coalition of Greater Minnesota Cities (CGMC), we would like to request an extension of the 30-day period for public comment on the EPA's additions to Minnesota's 2020 Impaired Waters List.

The CGMC is an organization of more than 100 cities located throughout the state of Minnesota. Our organization has a strong interest in the additions proposed by the EPA because many of our cities could be impacted through their wastewater facilities. If these waterbodies are successfully added to the impaired waters list, it could result in changes to multiple permits for wastewater facilities.

Our organization, and possibly several of our individual member cities, will be submitting comments and we need more time to examine and understand the materials and data that led to these proposed impairments. We respectfully request that the EPA extended the comment period deadline to June 30, 2021.

Thank you for your attention to this matter. If you have any questions, please contact me at eawefel@flaherty-hood.com or 651-492-3998.

Sincerely,

Elizabeth Wefel
Flaherty & Hood, P.A.
Attorney, Coalition of Greater Minnesota Cities

From: [redacted]
To: Proto, Paul
Subject: MN Impaired Waters List
Date: Sunday, May 9, 2021 7:13:16 PM

Dear Mr. Proto:
You recently proposed adding a number of lakes and streams in Minnesota to the Impaired Waters List due to Sulfate pollution potentially affecting the growth of wild rice.

The State of Minnesota has been lax for years in not protecting the state's waters. I believe they have purposely done this because they favored industrial profits (taconite mines on the Mesabi Range). While I have no Native American blood and I am not a current Minnesota resident, I believe that the complaints by the various tribes over this issue are entirely warranted. I am however a former Minnesota resident (15 years) who knows the value of clean water and the culture of wild rice harvesting.

I have also been closely following the issue of the new copper-nickel sulfide producing mines near the BWCAW and I know that the State has shortcut the environmental process. They have pushed the two new mines forward while ignoring their potential pollution.

I urge you to add these 30 new waters to the Impaired List.

Sincerely,
[redacted]

From: [redacted]
To: Proto, Paul
Subject: Sulfates
Date: Monday, May 10, 2021 1:25:05 PM

Please uphold the state of MN's own law and actually protect the Wild Rice!
Pretty sad when you have to fight so hard to see a law actually being enforced!

Sent from my iPad

From: [redacted]
To: Proto, Paul
Subject: Comment regarding wild rice sulfate standard
Date: Monday, May 17, 2021 1:24:42 PM

05/17/2021

Paul Proto
US EPA Region 5
77 W. Jackson Blvd.
Chicago, IL 60604

Dear Mr. Proto:

I am writing to strongly urge the U.S. Environmental Protection Agency (EPA) to rescind the proposed list of 30 waters and fully approve the Minnesota Pollution Control Agency's (MPCA) 303(d) impaired waters listing as proposed to the EPA. The list submitted by the MPCA is in compliance with the Clean Water Act and is consistent with lists provided in previous years which the EPA approved. The EPA must recognize that until waters have been properly designated and criteria established to determine impairment, the MPCA should be responsible for the decision regarding implementation of the wild rice sulfate standard, which is a state-level rule, not a federal regulation.

This decision has broad economic implications for Minnesota communities, governments, and the hardworking men and women across the state. This is an issue that needs to be decided with the input of all Minnesotans in a transparent and open process. We cherish our native wild rice and want to see it continue to thrive and prosper. The approach being taken by the EPA may not do anything to support our wild rice, yet it could have significant negative impacts on our economy and jobs. Please reconsider. Thank you.

Sincerely,

[redacted]

[redacted]

NOTE: Approximately 900 comments received by U.S. EPA between May 17, 2021 and June 30, 2021 duplicated the messaging of Comment #9.

From: [redacted]
To: Proto, Paul
Subject: Minnesota Clean Water Act 2020 Section 303(d) Waters Listing – Wild Rice Waters Impaired Due to Sulfate
Date: Wednesday, May 26, 2021 12:36:02 PM

Mr. Proto,

I'm writing to express my strong support for the U.S. Environmental Protection Agency's (EPA) decision to partially disapprove Minnesota's 2020 Clean Water Act Section 303(d) impaired waters list and EPA's related proposal to list at least 30 wild rice waters impaired due to sulfate.

Minnesota used to be covered with wild rice (manoomin), and the Ojibwe people migrated here to find the place where food grows on water. Much of Minnesota's wild rice has been destroyed, and our State must now come into compliance with the Clean Water Act to protect and restore natural wild rice. In Minnesota, wild rice is important to protect tribal treaty rights, as a source of healthy nutrition and cultural continuity, and to sustain fish, waterfowl, and mammals who depend on this important plant.

For years, the Minnesota Legislature has served the interests of polluters and hamstrung the Minnesota Pollution Control Agency (MPCA). Rather than standing up to our Legislature, MPCA has avoided enforcement of Minnesota's sulfate standard that protects wild rice and has failed to list even a single wild rice water where sulfate pollution exceeds this 10-parts per million (mg/L) standard.

Thank you for exercising federal oversight to break this logjam.

As well as supporting EPA's addition to Minnesota's 2020 Clean Water Act Section 303(d) list of all 30 wild rice waters impaired due to sulfate proposed by EPA, I request that EPA:

*Include additional waters on Minnesota's 2020 impaired waters list where state, stakeholder, or tribal evidence shows that wild rice has grown in those waters at any time since November 28, 1975, whether or not the MPCA has already listed them.

*Include additional waters on Minnesota's 2020 impaired waters list where reliable data shows sulfate levels over 10 mg/L, even where there are relatively few samples, both to protect wild rice and to remove the incentive for Minnesota agencies to avoid sulfate monitoring in wild rice waters.

*Continue to hold the MPCA accountable to protect Minnesota waters, fish, wildlife, and human communities as required under the Clean Water Act.

The EPA's oversight of MPCA's Clean Water Act impaired waters process is a huge step forward for environmental protection and environmental justice.

Thank you again,

Sincerely,
[redacted]

(b) (5)

NOTE: Approximately 550 comments received by U.S. EPA between May 26, 2021 and June 30, 2021 duplicated the messaging of Comment #157.

From: [redacted]
To: Proto, Paul
Cc: [redacted]
Subject: Wild rice and the Minnesota River
Date: Thursday, May 27, 2021 12:21:55 PM
Attachments: [redacted]

Hi Paul - I wrote this paper about ten years ago when I worked at the MPCA. Clearly the Minnesota River mainstream was a wild rice river until agriculture polluted the river. Does wild rice have to be present after 1975 to make the river eligible for wild rice designation if it was polluted out of existence before then? Thanks

[redacted]

As a Scientist, Engineer, & amateur historian, let's look at the early history of the Minnesota River through the lens of biology and history, focusing on wild rice and mussels. These two were selected because they are both very dependent on very clear and clean water. So let's look at some historical references and the story they tell.

RICE

Minnesota State University Mankato wrote Minnesota River Basin Trends [http://mrbdc.mnsu.edu/mnbasins/trends]. Below are a couple of short sections:

> "Otter, Buffalo, Wild Rice, Duck
>
> 'We paddled way at the rate of four or five miles an hour … when the otters were seen swimming amongst the zizania. … The musk-rats were already at work building their conical houses on the marshy grounds, with mud and straw of the wild rice, against the approach of winter. As we advanced through these low rice-grounds, clouds of wild ducks rose on the wing, and we killed them at our leisure from the canoe.' – George Featherstonbaugh, 1835.
>
> Wild Rice
>
> 'A most delightful country, abounding with all the necessaries of life that grow spontaneously … Wild rice grows here in great abundance; and every part is filled with tress bending under the loads of their fruit, such as plums, grapes, and apples.' – Jonathan Carver, 1766"

Some people may feel that this information is too old and not useful for today, but it does establish that the water quality must have been very high, with especially low suspended sediment concentrations, to support these widespread and healthy beds of rice. The Minnesota River may be the Big Muddy now but it clearly wasn't then. Now let's review the Minnesota River in the early 20th century.

MUSSELS

From a PowerPoint supplied by John Sullivan:

> ~ 170 years ago below the Redwood River … " … we found the water beautifully transparent, and the unios stuck in countless numbers in pure white sand, so that I could, by baring my arm, select them as we went along." – G.W. Featherstonhaugh, September 26, 1835.

Again, we are starting early, to establish the Minnesota River mainstem was shallow, clear, clean, and sandy enough to allow countless numbers of mussels.

Now let's review the history of mussel production in the Minnesota River mainstem in the early 20th century. The Bell Museum of Natural History produced A Survey of the Mussels of the Minnesota River, 1989, written by Robert Bright and three co-authors [http://files.dnr.state.mn.us/eco/nongame/projects/consgrant_reports/1990/1990_bright_etal.pdf]. Below is a lengthy but very instructive description of the mussel quality river now as compared to what it was in the early 1900s:

"**Abstract**

A survey of the Mussels of the Minnesota River of southern Minnesota was made during the summer of 1989. Fifty-nine sites were studied and 1268 live specimens representing 20 species were examined for size, condition, and abundance. The distribution of both live and dead species was determined from the site analysis. Both quadrants and timed searches were employed to gather the data.

Forty native species have been reported to have occurred in the river since the late 1800's but one of them, *Anodonta grandis coprulenta*, was not distinguished from *Anodonta grandis grandis* for the purposes of this study. Of the 39 taxa recognized, only 20 were found to be living in the Minnesota River now, 17 others apparently have been extirpated, and two species are extralimital. *Corbicula fluminea*, the introduced Asian Clam, was found in the lowermost part of the river in 1978, but has not been found to live there since.

Many of the extant species are considered to be in some degree of trouble. No signs of reproduction or recruitment were found in many sites, and at others they ranged from poor to good. Both reproduction and recruitment success differed among the species.

Density was found to be low at most sites and no mussels were found at a few others. Both density and diversity (as seen as numbers of species) were highest just below dams as the results of fish congregating there and the reasonably stable habitat provided by the dam.

Among the variety of limiting factors affecting the mussels of the Minnesota River, drought, unstable substrates, excessive siltation, and perhaps chemical pollution emerge as the most important ones.

In its present condition, the Minnesota River mussel fauna cannot tolerate commercial harvesting"

Seventeen species extirpated; many considered being in some degree of trouble. While the Abstract is illuminating and suggestive of the diminution of water quality from the early 1900s to the present, the next section in the report adds a significant level of perspective:

"**Introduction**

Although mussels have been periodically recorded from the Minnesota River since the early 1800's and their shells were eagerly sought by the button industry a century later, there has never been a systematic study to determine either their distribution or abundance in the entire river. Recognizing a need for such information, the Minnesota Department of Natural Resources Nongame Wildlife Division sponsored a comprehensive study of the mussel fauna in the summer of 1989 that is reported herein.

Fossil mussel shells from Holocene floodplain deposits along the river indicate that a diverse fauna existed in the Minnesota long before the area was settled by Europeans, and that mussels were abundant in some stretches.

Early Americans used mussels for food and tools along the Minnesota River as evidenced by shells found in some archaeological sites (Guy Gibbon, personal communication), but they

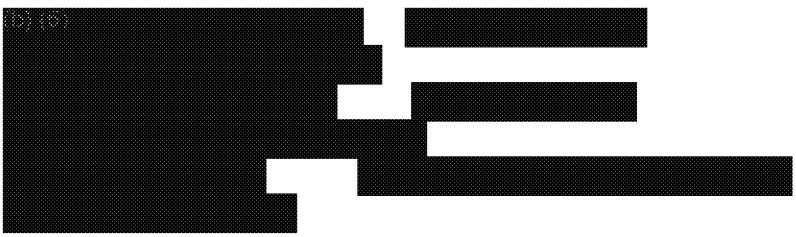
were not particularly exploited until the peak years of the button industry in the early 1900's. During those years, mussels were commercially harvested as far up the river as Montevideo, as well as in some major tributaries. Nachtrieb (1908) found during his survey of the Minnesota River, ' ... three beds in the course of half a mile which yielded about 30 tons of shells during the summer' at Bristol's Ferry (a few miles below Belle Plaine). In 1917, 2054 tons of shells were harvested from the Minnesota River and almost five tons from the Pomme de Terre (DeLestry, 1918). It has proved impossible to determine precisely how many years harvesting took place in the Minnesota River, but in all likelihood it was not a profitable venture by the mid 1920's because the entire industry was in a state of collapse due mainly to overharvesting.

The purpose of this study was to determine the diversity, distribution, and abundance of mussels in the Minnesota River, and also to evaluate reproductive success at as many places as possible. It is intended that the data reported here may serve as a basis for ascertaining future changes in the river's mussel populations."

Over 2000 tons in one year! 30 tons of shells from a half mile of stream in one year! To me, the point of this historical information is not to bemoan our overharvesting but to establish what the river could sustain not that long ago and cannot sustain now.

Picture what the mainstem looked like when Lake Pepin was filling in at the rate of 4000 years versus the current rate of 400 years [a 1000% increase of the rate of accretion]. Now think about what has changed from the early 1900s. Increased precipitation – maybe a little, but we are talking about a 1000% increase, most of it attributed to the Minnesota River basin. So what has changed from the 1920s until now? Maybe we can come to a more informed opinion when we begin with what was, even though it may be a little inconvenient.

I think some people like to think of the Minnesota River as always looking as it does now (or maybe just a little bit better, but not much), but the history of wild rice and mussels just does not bear that out. Not that long ago, the river was teeming, and ran clear and clean. Rice doesn't lie; neither do mussels. The river is clearly not meeting its Aquatic Life designated use.



From: [redacted]
To: Proto, Paul
Subject: Comments on Public Notice of EPA"s Additioins to Minnesota"s Impaired Waters List
Date: Monday, June 7, 2021 7:35:48 AM
Attachments: [redacted]

Dear Paul Proto,

Attached are comments from the Duluth Chapter of the Izaak Walton League of America on the public notice of EPA's additions to Minnesota's Impaired Waters List. Thank you for the opportunity to provide our input on this very important natural resource issue for Minnesota. Water is life and wild rice is one of the best manifestations of a clean, healthy, shallow water environment. We thank you for your efforts to protect it!

...Rich Staffon, President
W. J. McCabe Chapter, IWLA
rcstaffon@msn.com 218-879-3186 h, 218-451-1415 c

"Far and away the best prize that life has to offer is the chance to work hard at work worth doing." Teddy Roosevelt

W.J. McCabe (Duluth) Chapter
Izaak Walton League of America

P. O. Box 3063. • Duluth, MN 55803
WWW.DULUTHIKES.ORG

June 7, 2021

Paul Proto, Environmental Scientist
US EPA, Region 5, Water Division, Watersheds and Wetlands Branch
77 W. Jackson Blvd., WW-16J
Chicago, IL 60604
Via Electronic Mail: proto.paul@epa.gov

Dear Mr. Proto,

I am writing to provide our comments on the U.S. Environmental Protection Agency (EPA) identification of 30 water quality limited segments impaired for sulfate for inclusion on Minnesota's 2020 List of Impaired Waters under Section 303(d) of the Clean Water Act. We strongly support EPA taking this action to require the Minnesota Pollution Control Agency (MPCA) to list wild rice waters that are impaired due to sulfate contamination, primarily caused by discharge from mining and waste water treatment. Our wild rice waters are a highly unique and valuable natural resource that are threatened and deserve such protection under the Clean Water Act, which the MPCA has been unwilling or unable to provide.

The time to take action is long overdue and we thank the EPA for doing this. We especially appreciate that EPA is consulting with and listening to the concerns raised by Minnesota's Tribal governments. Of all the people of Minnesota, their history and culture are the most closely tied to wild rice. Its protection is especially vital to them, and they have a great deal of knowledge about the state's wild rice waters.

These comments are being submitted by the W. J. McCabe (Duluth) Chapter of the Izaak Walton League of America (IWLA). The IWLA has a major interest in the protection and restoration of our nation's waters, and has a long history of action on matters pertaining to fishable and swimmable aquatic resources. Since 1922, the IWLA has been a national leader as a defender of our soil, air, woods, waters and wildlife.

The Duluth chapter has been engaged in a wide range of issues concerning public policy and natural resources in northeastern Minnesota dating back to the 1950s. That desire to

protect our environmental quality continues to this day. Therefore, please accept these comments regarding our concerns and observation over the need for listing of additional waters in Minnesota that are impaired by the anthropogenic discharge of sulfates. Our concerns are threefold:

- Sulfate pollution has historic and ongoing impacts that negatively affect the health and survival of wild rice, and the subsequent spiritual, cultural, and nutritional impact this has on native peoples, the broader society, and fish and wildlife.

- Sulfate through reduction produces hydrogen sulfide, which even at very low levels (2 ug/L) is toxic in aquatic communities[1].

- The well recognized role that sulfates play in the methylation of mercury and accumulation in fish tissue has resulted in negative human health impacts in northeastern MN.

Sulfate must not only be examined under the confines of the wild rice sulfate standard. The entirety of its role in the environment should be considered when listing impaired water bodies.

While most of our members are not scientists with experience in wild rice research and aquatic studies, we have tried to educate ourselves on the issue of sulfate/sulfide interactions with wild rice. We've held public programs on the subject, and listened to researchers and natural resource managers intimately familiar with this issue, including [redacted] University of Minnesota-Duluth, [redacted] Water Projects Coordinator for the Fond du Lac Band of Lake Superior Chippewa, and [redacted], Duluth EPA Office of Research and Development. We believe there is an undeniable link between sulfates and impacts to wild rice from natural sources, or more commonly from human caused pollution discharge, primarily associated with mining, energy production from fossil fuels, pollutants from industrial sources, and wastewater treatment facilities.

Years of extensive research supports the currently adopted Minnesota sulfate water quality standard of 10 mg/L, found in *MPCA Rule 7050.0222, (subpart 4a Cool and warm aquatic life and habitat, drinking water, and associated use class A. Miscellaneous Substance, Characteristic, or Pollutant - 31)*, and as adopted by the EPA and incorporated into standards of the CWA for the protection of wild rice.

The MPCA has published a short list of select waters/water segments that are intended to be protective of wild rice using the present 10mg/L standard.[2] We find this list too limiting,

and in fact it should be viewed as an abdication of MPCA responsibility to enforce the standard under both Minnesota Rule and the CWA.

First, the true distribution of wild rice waters in northern Minnesota is far more extensive than MPCA's published list. Both the Minnesota Department of Natural Resources (MNDNR) and various Tribal entities, including individual Bands, 1854 Treaty Authority, and Great Lakes Indian Fish and Wildlife Commission (GLIFWC), have lists that are far more inclusive of all the bodies of water that should be included in Minnesota's list of wild rice waters. We believe that all waters that currently or historically supported wild rice should be included in the list of waters protected under the CWA for sulfate.

At a meeting with [redacted], we were briefed on his research on wild rice. [redacted] observations discovered an iron precipitate encrusting the root tissue of wild rice exposed to elevated (>50 mg/L) levels of sulfate. [redacted] looked at associations between oxygen around the plant root surface, type of rooting substrate, available iron, presence and levels of sulfate (to produce sulfide), microbes found near the germinating root system, and timing of nutrient uptake for rice seed formation and development. The research pointed to the fact that the microbes caused iron sulfide to precipitate out when oxygen is absent at the root surface in the late stages of the wild rice life cycle. As this iron sulfide precipitate builds up around the roots it shuts off the uptake of critical nutrients (N and P) just as the seeds are forming and maturing, resulting in poor seed viability. With prolonged exposure to sulfate levels in excess of 50 mg/L, this issue of poor viability compounds itself year after year, until eventually the stands collapse and disappear.

[redacted] advised that more research is needed to fully understand this complex relationship. But [redacted] preliminary results indicate that the existing sulfate standard of 10 mg/L should continue to be used until there is definitive scientific proof to revise it.

As recently as 2017 MPCA attempted to model a new sulfate standard that could be protective of wild rice under a variety of conditions, particularly with respect to differences in sediment chemistry. Their model was untested in real world environments where variations in local conditions might have contributed to poor wild rice survival. This variation might have been directly related to model parameters including sulfide concentration, root substrate, and seasonal fluctuations in water and sediment chemistry; or indirectly related to things like wild rice genetic variability. It is important to recognize that there is a great deal of uncertainty in the relationship between surface water sulfate concentrations and within sediment sulfide concentrations, and that sediment carbon and iron availability only partially explain this relationship. Nonetheless, MPCA proposed adopting and implementing this new methodology.

After a contested case hearing before an Administrative Law Judge (ALJ), where the proposed new model for sulfate was dismissed, the Chief Administrative Law Judges Order on Review found that the ALJ was correct, that among other things, this methodology lacked transparency, that MPCA's assertion that methylation of mercury was outside the scope of the rulemaking process was incorrect, and that the process proposed was invalid because it was "insufficiently specific to be approved", and was not "rationally related to the Agency's objective" of "protect(ing) wild rice from impact of sulfate, so that wild rice can continue to be used as a food source by humans and wildlife." [3]

Secondly, EPA and MPCA are missing the opportunity to protect fish and macro-invertebrate communities (fish-food organisms) which are adversely affected by sulfate reduction to hydrogen sulfide (H_2S), just like wild rice plants are affected lethally.

The US EPA water quality criterion for the protection of fish and aquatic life is 0.002 mg/L hydrogen sulfide (USEPA GOLD BOOK 1986). Compared to the sulfate standard for wild rice of 10 mg/L, only a small percentage of the 10 mg/L sulfate (< 0.1 %) when converted to the toxic form of H_2S, would be needed to adversely affect fish, fish food (phytoplankton and macro-invertebrates), and viable long-term populations![4]

So, not only do we need to protect wild rice from sulfate, we need to recognize and acknowledge the fact that fish are also being placed at risk by discharging sulfate into these natural waters, either from point sources or from non-point sources, most commonly associated with mining, fossil fuel energy production and wastewater treatment.

EPA should not overlook the connection between sulfate/sulfide and mercury in the formation of methylmercury, and the serious problems associated with its bio-accumulation into fish tissue. This toxic form of mercury moves up through the food chain and is likely causing long-term consequences in humans, where the problems are particularly acute for women and their fetus during pregnancy, and in young children. A 2011 Minnesota Department of Health study, "Mercury Levels in Blood from Newborns in the Lake Superior Basin", (https://www.health.state.mn.us/communities/environment/fish/techinfo/newbornhglsp.html) found that 10% of newborn babies in our region had elevated levels of mercury in their blood. For these individuals, this neuro-toxin could inhibit fetal development, lead to childhood learning disabilities and possibly long-term chronic health issues. Because elevated levels of sulfate in our waters are one of the factors that promote the conversion of elemental mercury to methylmercury, the reduction of sulfate levels should be a priority to help our region solve this long-term human health issue. We need to consider what the impact of failing to enforce the sulfate standard for wild rice, and to list all impaired waters, might have upon methylmercury production, its uptake by fish, and human health.

We believe that MPCA set a bad precedent when it failed to list all impaired wild rice waters, because it provides a "backdoor pass" to those industries that are responsible for contributing sulfate and mercury to our state waters, resulting in non-compliance for pollution standards long established under the CWA.

Wild rice only inhabits high quality waters that exhibit unique chemical and physical characteristics. The water that flows out from wild rice lakes and rivers tends to be of the highest quality. The presence of healthy wild rice stands is an indicator of some of the best fish and wildlife habitats and environments in the state. This knowledge points to the importance for EPA and MPCA to protect these valuable waterbodies.

Wild rice is a key indicator species for a very productive, biodiverse ecosystem type, supporting many species of plants, fish and wildlife. Its presence in a waterbody signifies that it is relatively unaltered from pre-settlement condition and represents a high-quality natural area.

In the "Wild Rice Monitoring Handbook" by Tonya Kjerland (University of Minnesota Sea Grant Program – publication #SH16) in the chapter titled "*Biology of Wild Rice*" on page 75 "*Water Quality*", it states, "Wild rice is considered to be a bio-sentinel for water quality due to its tendency to thrive under specific conditions."

Citizens have a reasonable expectation that our regulatory agencies will utilize the CWA to protect our unique wild rice resource with the high status it deserves. Unfortunately, MPCA has relegated it to a class of water that is only suitable for irrigation and livestock drinking water, which we see as unimaginable and wrong. Incorrectly classifying wild rice waters in this way disregards their importance and is a capitulation to industry. We recommend that wild rice waters should be included under Class 1 – Domestic Consumption, or Class 2 – Aquatic Life and Recreation. As a sentinel species for high water quality, Class 1 and 2 are more appropriate.

Finally, the lack of inclusion and transparency by MPCA, and its failure to utilize scientifically credible, publicly available information in the listing of Minnesota's wild rice waters leaves a gaping hole in the protection of these environmentally important and culturally significant waters. We believe that the list of wild rice waters throughout Minnesota must include all waterbodies that currently or in the past supported healthy stands of wild rice. We also must be careful to not assume that the wild rice/aquatic conditions of today, reflect the wild rice/aquatic conditions of the past. Many waters have for decades suffered from the impacts of pollution and degradation from multiple sources, and these may no longer

sustain once thriving populations of wild rice. We must not grandfather in past sulfate pollution, especially if it results from past lax MPCA oversight.

We do again want to thank the EPA for taking this important first step in addressing a major flaw in the enforcement of CWA standards related to sulfate and wild rice, by insisting that MPCA add 30 wild rice waters to the state's List of Impaired Waters. But we cannot be satisfied with just listing the "dirty 30". EPA should use the MNDNR and Tribal lists of wild rice waters, and include all those that are impaired by sulfates, ranking them from the most to least impaired. Waters that historically sustained wild rice but are no longer able to do so as a result of sulfate impairment should be included.

This listing should not exclude waters that are or might someday be impacted by mining or industrial development. We suspect the exclusion of important wild rice waters, including some upper segments of the St. Louis River, would not be happening without the undue influence of industry and our state's recent political makeup.

We recognize the challenges faced by the MPCA to enforce the current sulfate standard in the in the face of political interference, and the costs that would be incurred by the mining and power industries, and municipal wastewater treatment systems. Some flexibility may be reasonable and needed when enforcing the standard, particularly for waterbodies that are near the 10 mg/L standard, and current impacts appear minimal. However, the listing of wild rice waterbodies should be based on sound science, and not solely on economically driven political pressure. This is especially important with the prospect of untested copper-nickel mining on the horizon, where mining operations in sulfide ore bodies are likely to discharge sulfates into the downstream waters.

The MPCA has not done its duty to protect our wild rice stands by enforcing the current 10 mg/L sulfate standard, enacted into law more than 45 years ago, and seldom enforced, despite documented exceedances over the years. This has led to a known loss of wild rice stands over time. Minnesota needs its 10 mg/L standard along with a comprehensive list of the state's wild rice waters, and a reasonable assurance that these standards will be enforced by regulators. It is also very important that MPCA require industry to monitor for sulfate in their NPDES permits so the standard can be enforced. In that way both industry and the public would have a clear understanding of what is needed and what will be required.

An additional concern with monitoring is that the occasional flushing of water retention facilities at mines or power plants may result in pulses of high concentrations or volumes of sulfates in downstream waters. The impacts from these could be significant, especially if

they happen during the sensitive period of the growth cycle of wild rice. Periodic monitoring for sulfates may miss these events, underestimating the actual impacts to wild rice waters.

We believe it is the responsibility of the EPA, under the Clean Water Act, to ensure that MPCA complies with enforcement of the currently adopted sulfate standard on all justifiable wild rice waters, that currently support or historically supported wild rice stands. It is our hope that regulators, conservationists, industry and the legislature will find a way to work together to solve this problem. Instead of blocking sound regulations, our legislature should consider providing financial assistance to help industry meet the standards and protect our precious natural resources. To assist in addressing cleanup of sulfate discharges into wild rice waters, we recommend that EPA work with Federal elected officials to incorporate funding for upgrading wastewater treatment facilities into the National Infrastructure Bill.

In conclusion, the quantity and quality of wild rice waters in Minnesota is unique to our nation. Although reduced from its past abundance, wild rice is still an important and highly valuable natural resource in our state. It is our responsibility to manage this nationally significant resource wisely. We need enforcement of the sulfate standard to protect the water quality in our remaining wild rice stands, and to restore stands that have been degraded over time. Our regulatory agencies should insist on water quality standards that protect human health from sulfate-related methylmercury contamination. The incredible long-term environmental and social values of Minnesota's wild rice waters should not be sacrificed for the short-term economic gains of mining or other industries.

We appreciate the opportunity to provide these comments, and we hope they are helpful to you as this process moves forward.

Sincerely,

/Rich Staffon/

Rich Staffon, President
W. J. McCabe Chapter, Izaak Walton League of America
1405 Lawrence Road,
Cloquet, MN 55720
218-879-3186 h,218-451-1415 c, rcstaffon@msn.com

[1] "Sulfide as a soil phytotoxin – a review" by Leon P. M. Lamers, et. al. – Frontiers in Plant Science – Plant Physiology – July 2013 – Volume 4 – Article 268

[2] In the Matter of the Proposed Rules of the Pollution Control Agency Amending the Sulfate Water Quality Standard Applicable to Wild Rice and Identification of Wild Rice Rivers, Minnesota Rules parts 7050.0130, 7050.0220, 7050.0224, 7050.0470, 7050.0471, 7053.0135, 7053.0205 and 7053.0406

[3]OAH 80-9003-34519 Revisor R-4324

CHIEF ADMINISTRATIVE LAW JUDGE'S ORDER ON REVIEW OF RULES UNDER MINN. STAT. § 14.16, SUBD. 2, AND MINN. R. 1400.2240, SUBP. 5.

II. Proposed List of Waters

Federal law delegates to states the authority to establish designated uses of waters and to establish water quality criteria to protect those designated uses in bodies of water.[47] States are prohibited from removing a designated use, if such a use is an "existing use," unless a use with more stringent criteria is added.[48] An existing use is one "actually attained in the water body on or after November 28, 1975, whether or not it is included in the water quality standards."[49]

In the proposed rule, the Agency identified a list of approximately 1,300 waters at Minn. R. 7050.0471. The MPCA based its list upon, among other sources, a comprehensive, reviewed list compiled by the Minnesota Department of Natural Resources (DNR) in a 2008 Report to the Legislature.[50] The MPCA recognized that the DNR's list "is widely considered the most comprehensive source of information regarding where rice may be found in Minnesota" and so extensively reviewed the DNR list when making its designations.[51] In compliance with its legislative directive, the MPCA also consulted with the various Tribes when compiling its list.[52]

In making its determinations as to which water bodies would be included in the list, the MPCA did not explicitly apply the standards it intends to use in future rulemakings to determine whether a water body should be added to the list of wild rice waters.[53] Instead, the Agency used a "weight of evidence" standard to identify waters that met its criteria for "beneficial use as a wild rice water."[54] The rulemaking record does not identify each water considered and rejected for inclusion on the list, nor does it reveal on what basis the Agency rejected any proposed water from inclusion on the list.[55] The MPCA

[46] MPCA Resubmission, at 6 ("Protection of downstream waters is required by 40 CFR 131.10(b). The MPCA already complies with this requirement and there is now a state rule that expressly requires such compliance, Minn. R. 7050.0155.... [To protect these waters, MPCA will] 'facilitate consistent and efficient implementation and coordination of water quality-related management actions' such as permits.").

[47] 40 C.F.R. § 131.3.

[48] 40 C.F.R. § 131.11(h)(1).

[49] 40 C.F.R. § 131.3(e); *See* Report of the Administrative Law Judge at 65, 68, Findings 269, 283.

[50] Report of the Administrative Law Judge at 63-64, Findings 263, 265.

[51] *Id.* at 64, Finding 265.

[52] *Id.* at 62, Finding 261.

[53] *Id.* at 67, Finding 279.

[54] *Id.* at 67, Finding 278.

[55] *Id.* at 67, Finding 279. According to its Resubmissions, the Agency recently asked the federal Environmental Protection Agency (EPA) how uses are designated and whether an existing use can be a designated use. The EPA responded in a March 5, 2018 letter to the Agency (March 28 letter, Att. 1, at 5- 8). The only discussion of "existing use" is a clarification of the regulatory definition at 40 CFR 131.3 (e) ("those uses actually attained in the water body on or after November 28, 1975, whether or not they are included in the water quality standards.") The EPA explains "that existing uses are known to be 'actually

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acknowledged that it may not have included in the proposed list all waters where the wild rice use has existed since Nov. 28, 1975.[56]

The Administrative Law Judge disapproved the proposed list, concluding that the MPCA's approach excluded hundreds of water bodies previously on lists from the DNR and other sources, including the 1854 Treaty Authority's 2016 and 2017 lists of wild rice waters.[57] The Administrative Law Judge determined that these exclusions violated the federal prohibition against removing a designated use if such a use is an existing use.[58] She also expressed concerns with the reasonableness of the Agency's exclusion of waters without any explicit standards or discussion.[59]

In its Resubmissions, the Agency argued that it compiled its list in consultation with the DNR and tribes, but insisted that it alone can determine what constitutes an "existing use" in Minnesota for purposes of the federal Clean Water Act (CWA).[60] Citing Minn. Stat. §§ 115.03, subd. 1(b) and 115.44, the MPCA argues that it is the only state agency with legal authority to classify waters of the state and assign designated uses.[61]

The Agency's authority is not as clear as it asserts. Minn. Stat. §§ 115.03, subd. 1(b) and 115.44 address the Agency's authority to classify waters, not specifically to determine existing uses for purposes of the CWA. While federal law provides that "the state" may determine existing uses, it does not specify which agency within a state has that unique authority.[62]

Even if the MPCA can establish that its authority trumps that of the DNR or any other state agency, it cannot establish that it is the sole decider of what constitutes an existing use for purposes of federal law. The CWA specifically authorizes certain Indian tribes to make designations as well. The Fond du Lac Band and the Grand Portage Band of Lake Superior Chippewa are both authorized to do so based on approved agreements with the federal government regarding water quality standards.[63] Both Bands agreed that, in rejecting the DNR's report and the 1854 Treaty Authority's list, the MPCA was removing waters that the Bands had already designated as having wild rice as an

existing use under federal law.[64]

attained' when the use has actually occurred *and* the water quality necessary to support the use has been attained. EPA recognizes, however, that all necessary data may not be available to determine whether the use actually occurred or the water quality to support the use has been attained. When determining an existing use, the EPA provides substantial flex bility to states and authorized tribes to evaluate the strength of the available data . . . ." *See* MPCA Resubmissions, Attachment 1 at 8, citing 80 Fed. Reg. 51027.

[56] Report of the Administrative Law Judge at 67, Findings 280-282.

[57] *Id.* at 65, Finding 269.

[58] *Id.* at 69, Finding 287.

[59] *Id.* at 68, Finding 283.

[60] MPCA Resubmissions at 8-10.

[61] *Id.* at 9.

[62] The Chief Administrative Law Judge notes that the MPCA is designated as the "agency responsible for providing section 401 certifications for nationwide permits' under the CWA. Minn. Stat. 115.03, subd. 4a (2016).

[63] MPCA Resubmissions at 9, n 44.

[64] Report of the Administrative Law Judge at 65, Finding 269, n 395.

[111133/1] 12

[4] Email correspondence with [redacted]
[redacted] Sun, May 16, 2021 at 2:26 PM
To: [redacted]

Hi [redacted]

Note my comments on WLSSD's permit regarding sulfate are relevant, and the literature cited on H2S plant toxicity.

Feel free to use this info for adding to the IKES comments, especially for protecting against fish and plant toxicity from sulfate reduction in sediments to toxic hydrogen sulfide.

Cheers,
[redacted]

Begin forwarded message:

From: [redacted]
Date: December 5, 2014 3:05:06 PM CST
To: "Nancy (MPCA) Drach" <nancy.drach@state.mn.us>
Subject: GEG comments on WLSSD draft permit: please acknowledge receipt

MEMORANDUM:

December 5, 2014

To:
Nancy J. Drach, MPCA 4th Floor Minnesota Pollution Control Agency 520 Lafayette Road North St. Paul, MN 55155-4194 Phone: 651-7572317 Email: nancy.drach@state.mn.us

From:

[redacted]

Research Chemist, US. Environmental Protection Agency, Duluth Lab. (Retired 2002).

[redacted]

[redacted]

Subject:

Public Comments on Draft Permit MN0049786, for WLSSD, Duluth, MN.

1. My interest in this permit is that the MPCA get the applicable science in place so the treatment of municipal and industrial wastes by WLSSD be cost effective and protective of the environment. I've served on the WLSSD board and at the USEPA for 35 years in conducting research on environmental protection including extensive studies on mercury impacts and assessment. I also am a property owner on Park Point and want the fish caught in the adjacent waters of Superior Bay and Lake Superior to be safe to eat by all my children, both grand- and great-grandchildren.

2a. SULFATE: I commend the MPCA for adding the monitoring of sulfate to the list of parameters to be monitored for the needed protection of wild rice in the Saint Louis River estuary. However, without recognizing that the toxic mechanism by which sulfate pollutes is through the conversion of sulfate to hydrogen sulfide in the surface sediments, the true extent of the damage to aquatic resources may not be realized. The water quality criterion for hydrogen sulfide is 2 micrograms per liter and game fish and fish food organisms can be adversely affected by sulfate conversion to hydrogen sulfide and its toxic effects in surface sediment habitat and its diffusion into over-lying waters causing fish eggs to be killed or adversely affected.

The sections of the permit writing dealing with sulfate and wild rice should be expanded to include the greater potential for fishery damage from sulfate and its toxic conversion product, hydrogen sulfide. Dissolved, gaseous hydrogen sulfide is as toxic as cyanide to aquatic plants (see **Sulfide as a soil phytotoxin—a review** *Leon P.M.Lamers, et. al* Frontiers in Plant Science | PlantPhysiology | July 2013 | Volume 4 | Article 268) and to aquatic animals (USEPA **Gold Book** 1986). The WQC for hydrogen sulfide should be added to the permit as a requirement for protecting the aquatic resources.

2b. MERCURY: It is a mistake to give a variance to a protective standard just because the standard can not be met at this time. Clearly, the fish mercury concentrations exceed safe consumption levels and will cause harm to those who eat the fish, especially, young

children and mothers who are expecting to have children. It is also bad precedent to give variances through the "back door" to the industries who's mercury contributions to the WLSSD discharge may be contributing to the non-compliance of the mercury concentrations being discharged.

However, the biggest omission with the draft permit is the lack of recognition that the total mercury in the discharge is not the only problem, it is the amount of methylmercury that is being formed and discharged by the WLSSD into the waters of the estuary where the fish are above the toxic response level for human consumption because of the methylmercury concentrations in the fish tissue. The formation of methylmerucry from total mercury is ignored in the write-up and rational for the permit. Methylmercury is the toxic form of mercury and the processes and mechanisms for its formation must be included in the WLSSD cleanup processing, solids formation, and final emissions and discharge composition. The percent methylmercury in the discharge of total mercury is an important factor in assessing the contribution of bioaccumulatable mercury immediately available to the fish and fish-food chain in the estuary and Saint Louis River. The nutrients, including sulfate, which affect the microbes that methylate mercury must also be taken into account and monitored.

The major sources of water to the WLSSD are through the Duluth municipal water system which uses Lake Superior water and the Cloquet water line which also takes its water from Lake Superior. The mercury content of this source water is less than one nanogram per liter.

Additions of chemicals by water treatment and industrial sources adds to the mercury content, as does the domestic use of water for waste disposal. Detailed examination of the sources of mercury need to be done to partition the easily separable and identifiable source mechanisms so that the appropriate controls and restrictions may be created. The WLSSD has a series of pretreatment regulations which could be brought into play to deal with the specific sources of mercury once they are identified. The sources which generate methylmercury concentrations are those which need to be dealt with first. Clearly, methylmercury must be one of the parameters which must be measured and controlled for if the most cost effective ways and means are to be found to reduce the fish mercury content of the estuary and Saint Louis River.

3. The basis for the reasons changes are needed in the WLSSD draft permit, supporting my comments and suggestions are contained in the many studies I have conducted.

[redacted]

National Health and Environmental Effects Research Laboratory, Duluth MN, 1968-2002.

Published 54 journal articles on studies of molecular structure of organometallic aquo ions, contaminant measurement methods, asbestiform fibers, disinfection, acidic precipitation watershed susceptibility, mercury deposition, cycling, and toxicity mitigation, and hydrologic cycle of water, law and policy.

Published reports and articles on mercury studies are given below:

Glass, GE, J. A. Sorensen, and G. R. Rapp, Jr. 2001. Mercury Deposition and Water Quality Trends in Minnesota Lakes. LCMR St. Paul, MN pp 103.

Glass, GE, J. A. Sorensen, and G. R. Rapp, Jr. 2001. Methylmercury Bioaccumulation Dependence on N. Pike Age and Size in Twenty Minnesota Lakes. ACS Sym Ser. 772, Persistent, Bioaccumulative, and Toxic Chemicals I, Ch. 11, pp 150-163.

Glass, GE and J. A. Sorensen 1999. Six-Year Trend (1990-95) of Wet Mercury Deposition in the Upper Midwest, USA Environ. Sci. Technol. 33:3303-3312.

Glass, GE, J. A. Sorensen, and G. R. Rapp, Jr., M. Balcer, and L Schwarzkopf 1999. Mercury Sub-surface Maxima in Sediments: a Diagnostic for Anthropogenic Origins. In: Ebinghaus, et al., (Eds) Mercury Contaminated Sites: Characterization, Risk Assessment and Remediation, Springer Environ. Sci. Ser., published by Springer-Verlag Heidelberg, pp.

467-486, Nov.

Sorensen, J. A., GE Glass, and K. W. Schmidt 1994. Regional Patterns of Wet

Mercury Deposition Environ. Sci. Technol. 28: 2025-2032.

Glass, GE, J.A. Sorensen, K. W. Schmidt, and G.R. Rapp., Jr. 1991. Mercury deposition, and sources in the upper Great Lakes region. J. Water, Air and Soil Pollut. 56: 235-249.

Sorensen, J. A. GE Glass, K. W. Schmidt, J. K. Huber, and G.R. Rapp. Jr. 1990. Airborne mercury deposition and watershed characteristics in relation to mercury concentrations in water, sediments, plankton, and fish in eighty northern Minnesota lakes. Environ. Sci. Technol. 24: 1716-1727.

Glass, GE, J.A. Sorensen, K. W. Schmidt and G.R. Rapp. Jr. 1990. New source. identification of mercury contamination in the Great Lakes, Environ. Sci. Technol. 24: 1059-1069.

Eilers, J.M., GE Glass, A.K. Pollack, and J.A. Sorensen. 1989. Changes in conductivity, alkalinity, calcium, and pH during a fifty-year period in selected northern Wisconsin lakes. Can. J. Fish. Aquat. Sci. 46: 1929-1944.

Sorensen, J.A., and GE Glass. 1987. Ion and temperature dependence of electrical conductance for natural waters. Anal. Chem. 59:1594-1597.

Lin, J.C., J.L. Schnoor, and GE Glass. 1987. Ion budgets in a seepage lake. In: Sources and fates of aquatic pollutants, Hites, R.A. and S.J. Eisenreich, (Eds.). Adv. in Chemistry Ser. No. 216, Am. Chem. Soc., Washington, D.C. pp. 209-227.

Rapp, G., Jr., B.W. Liukkonen, J.D. Allert, J.A. Sorensen, GE Glass, and O.L. Loucks. 1987. Geologic and atmospheric-input factors affecting watershed chemistry in upper Michigan. Environ. Geol. 9:155-171.

Glass, GE, J.A. Sorensen, B.W. Liukkonen, G.R. Rapp, Jr., and O.L. Loucks. 1986.

Ionic composition of acid lakes in relation to airborne inputs and watershed characteristics. J. Water Air and Soil Pollut. 31:1-15.

Loucks, O.L., GE Glass, J.A. Sorensen, B.W. Liukkonen, J. Allert, and G. Rapp, Jr. 1986. Significance of acidic deposition and watershed characteristics for lake chemistry in Wisconsin. J. Water Air and Soil Pollut. 31:67-77.

Rogalla, J.A., P.L. Brezonik, and GE Glass. 1986. Evaluation of empirical models to predict acidity in lakes of the upper Great Lakes Region. J. Air Water Soil Pollut. 31:95-100.

Glass, GE, E.N. Leonard, W.H. Chan, and D.B. Orr. 1986. Airborne mercury in precipitation in the Lake Superior Region. J. Great Lakes Res. 12:37-51.

From:	Paula Maccabee
To:	Wester, Barbara; Pfeifer, David; Proto, Paul
Subject:	Comments on EPA"s Partial Disapproval and Additions to Minnesota 2020 Section 303(d) List - Sulfate Impaired Wild Rice Waters
Date:	Monday, June 14, 2021 4:45:22 PM
Attachments:	ATT00001.txt

Dear EPA Region 5 Counsel and Staff,

As part of our response to the U.S. Environmental Protection Agency (EPA) public notice and opportunity to comment on EPA's Additions to Minnesota's 2020 Impaired Waters List, WaterLegacy is resubmitting the attached letter to EPA Region 5's Acting Administrator and Water Division Director and Attachments A-E which were sent to and received electronically by EPA on March 12, 2021. These documents constitute a portion of WaterLegacy's comments in this matter, and WaterLegacy intends to send additional comments on or before June 30, 2021.

The attached documents reflect WaterLegacy's understanding of the history of Minnesota's failure to list sulfate impaired wild rice waters, and they provide factual and legal background supporting EPA's determination to partially disapprove Minnesota's 2020 impaired waters list and add sulfate impaired wild rice waters to that list.

WaterLegacy would expressly request that our enclosed March 12, 2021 letter and its Attachments be placed in the administrative record of EPA's decisions to partially disapprove Minnesota's 2020 impaired waters list and to add certain water quality limited segments where sulfate exceeds Minnesota's wild rice standard. Please confirm that this has been done.

Thank you for your prompt attention to this matter.

Sincerely yours,
Paula

Paula Maccabee (she/her)
WaterLegacy Advocacy Director and Counsel
1961 Selby Ave., St. Paul MN 55104
phone: 651-646-8890
mobile: 651-775-7128
email: pmaccabee@justchangelaw.com
email: paula@waterlegacy.org

IRON RANGE MAYORS

5525 Emerald Avenue
Mt. Iron, MN 55768
Phone: 218-748-7651
Email: sgiorgi@ramsmn.org

"Quality of Life through Community, Industry, Environment, Recreation, Education"
"Home to the cleanest freshwater in Minnesota"

June 15, 2021

United States Environmental Protection Agency
Region 5
77 West Jackson Boulevard
Chicago, IL 60604-3590

RE: WW-16J

Dear Mr. Proto:

As mayors of communities located across the Iron Range of Northeastern Minnesota, we are compelled to comment on the decision of the Environmental Pollution Agency (EPA) to circumvent the Minnesota Pollution Control Agency's regulatory process by adding 30 sulfate impaired waters to the Minnesota Clean Water Act Section 303(d). This decision if allowed to stand, resulting in the enforcement of the only wild rice/sulfate standard in the country at the controversial 10 mg/L level will have a devastating impact on our communities and the region.

Northeastern Minnesota is a region of numerous small-town communities with our largest city being Hibbing (16,000 population) and many communities of 1000 people or less. Our communities lie along the iron ore deposits across the Range, consist of older housing stock and an aging population of 65+ aged residents. The enforcement of the wild rice/sulfate standard that even our MPCA has stated needs further study and clarification will require millions of dollars of investment for wastewater treatment enhancements that our region and our residents simply cannot afford.

Studies have shown that each water body is unique unto itself and the growth of wild rice varies greatly from one water body to another. Many of us have experienced wild rice harvesting during our lifetimes, and we understand the cyclical nature of the harvest. Water levels, wind, changing aquatic habitat and vegetation can all impact the growth of wild rice. As mayors of a region that takes great pride in having the cleanest freshwater in our state, we do all that we can to mitigate environmental hazards and protect our amazing natural resources. Many of our cities wastewater treatment plants have received awards for the level of service they maintain and adherence to the MPCA permit requirements.

Unfortunately, the enforcement of the ridiculous, one size fits all standard of 10 mg/L, the wild rice/sulfate requires construction of Reverse Osmosis treatment plants that are simply unaffordable for our small rural communities. RO is extremely expensive to operate, creates a brine that may be considered a biohazard and potentially results in even more long-term pollution that a discharge with a higher sulfate level would cause. Many of our communities are also facing expensive upgrades to their wastewater plants due to mercury mitigation requirements recently enacted by the MPCA.

As mayors we believe there is a common-sense solution to this issue. A task force that includes tribal representation, scientist, local officials, industry, and regulatory personnel should convene and work out a solution that provides for an investment in wild rice growth and preservation while also factoring in the incredible expense associated with enforcement of an outdated, unfounded wild rice/sulfate standard.

The following mayors have signed on to this letter from across the region of Northeastern Minnesota. We respectfully request careful and sincere reconsideration of the decision to add sulfate impaired waters to the MPCA list and recognize the financial devastation the enforcement of this standard will have on our region.

Sincerely,

Iron Range Mayors

Rick Cannata, City of Hibbing

Chris Vreeland, City of Hoyt Lakes

Peggy Anderson, City of Mt. Iron

Calvin Saari, City of Nashwauk

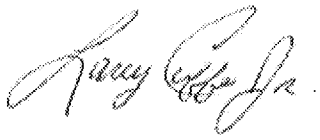
Jim Weikum, City of Biwabik

Bob Vlaisavljevich, City of Eveleth

John Tuorila, City of Calumet

Chuck Novak, City of Ely

John Champa, City of Chisholm



Larry Cuffe Jr. City of Virginia

William King, City of Keewatin

Douglas Gregor, City of Aurora

Andrea Zupancich, City of Babbitt

Karl Oberstar Jr, City of Gilbert

John Klarich, City of Buhl

Orlyn Kringstad, City of Tower

Wade LeBlanc, City of Silver Bay

The RANGE MAYORS are duly elected officials of 32 communities located in Northeastern Minnesota representing 78,000 residents. As mayors we feel compelled to speak out on issues of regional importance and impact as we battle every day to manage our city budgets, provide necessary essential services to our communities and grow our economy for a stronger region for tomorrow.

RAMS range association of municipalities and schools
5525 Emerald Avenue · Mountain Iron, MN 55768
Phone: 218.780.8877 · Email: SGiorgi@ramsmn.org

May 27, 2021

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

RE: WW-16J

Dear Mr. Proto:

The Range Association of Municipalities & Schools (RAMS) is a unique organization unlike any other in the nation. RAMS was created as an umbrella organization to bring together the collective voice of communities and schools located in the area known as the Taconite Assistance Area of Northeastern Minnesota. RAMS was created in 1939 and has been recognized as an advocacy organization that can bring a strong voice to issues of concern that impact our region.

We are writing today out of the serious concern over the decision of the Environmental Pollution Agency (EPA)'s decision to circumvent Minnesota's regulatory process adding 30 sulfate impaired waters to the Minnesota Clean Water Act Section 303(d). Northeastern Minnesota is home to the cleanest fresh waters found anywhere in Minnesota. The heritage of our region includes multiple indigenous tribes who still retain a distinct and respected presence, abundant forested lands, rich mineral deposits that primarily consist of iron ore now made into Taconite, and a thriving natural habitat including wetlands, agriculture, and wilderness areas.

Wild rice has been and still remains an abundant natural resource in many bodies of water all across our region. People who conduct the harvesting of wild rice, including those from our native populace will testify that there are two major contributing factors that result in a good fall harvest: (1) water levels and (2) wind. Few if any harvesters of wild rice will spend time lecturing on the level of sulfate in a water body and the impact it may have on wild rice.

Minnesota, thanks to John B. Moyle is the only state in the nation that has a wild rice/sulfate standard. Arguments over his research and analysis of his recommended standard are far reaching and inconclusive to say the least. In 2008, the Minnesota Pollution Control Agency, (MPCA) recognized the need to further understand and clarify the standard. Following years of researching the impacts of sulfate on wild rice, the agency drafted a rule revision for the wild rice standard that relied on a formula because they learned that every water body is not equal when it comes to wild rice growth. Research has shown water levels, temperature, clarity currents, etc. play a role in the health of aquatic plants and vegetation. More specifically here in Northeastern Minnesota, the iron content and bio-solids in the sediment are important factors that can influence wild rice growth.

Unfortunately, the MPCA's revised rule was rejected by the Office of Administration Hearings. In her ruling the Administrative Law Judge directed the state legislators to propose a new law or provide better direction to the MPCA. It is important to note that the judge did not dispute the need for a revised wild rice/sulfate rule, and in fact returned the issue to the legislature and regulatory agencies to address discrepancies in the proposed rule. Following this ruling, former Minnesota Governor Mark Dayton established a Wild Rice Task Force that spent months gathering feedback and analyzing research before issuing a report with a number of recommended action items that as far as we can tell, have not been implemented. Given the complexity of this issue and the state's own admission that the current standard is obsolete, the EPA's decision to add water bodies to the state's list of impaired waters sets a dangerous precedent with serious implications for our region

RAMS has long advocated and participated in wild rice task force activities and remains supportive of a wild rice task force made up of scientists, environmentalists, tribal representatives, local elected officials, wild rice harvesters, and industry to study wild rice and factors that influence growth in Minnesota. If a task force is not feasible, we urge the EPA to encourage Minnesota to resume its rule making process and revise the standard, so it accurately reflects the state's years of research and investment to get this right.

What RAMS cannot support is the economic hardships that will be forced upon our small rural communities if they are mandated to try and treat their wastewater discharges down to the existing standard of 10 mg/L. Reverse osmosis is the only known method of treatment that will assure compliance with the current sulfate standard. The construction and operation of RO plants is millions of dollars and they are energy inefficient which means they are costly and bad for the environment. RO also results in the production of a brine that at this time is of an undetermined quality. Does it contain high levels of concentrated chemicals that make it a biohazard? Again, this is undetermined, but we all know if that is the case, the cost of disposal increases dramatically and only perpetuates the potential pollution dangers that proponents of enforcement of this standard advocate for. It just doesn't add up.

Northeastern Minnesota is the iron mining capitol of the country. Over 85% of all domestic iron ore mining takes place on the Iron Range employing thousands in good paying jobs. What will happen to our region's economy if these companies are forced to invest hundreds of millions of dollars to meet a standard that is not supported by science and does not actually benefit wild rice growth? As a community organization, we are greatly concerned that these companies will close their plants and instead import iron ore from countries that do not have the rigorous environmental standards we have in Minnesota. The average population of our Iron Range communities is less than 5,000 people. For communities with limited property tax values, little to no industry tax base, the affordability of new and expanded wastewater treatment facilities would be crippling. User rates would often triple making it unaffordable for our senior dominated population, all for the sake of wild rice.

Are their mitigating steps that could be taken to help reduce sulfate discharges? Without a doubt. Consideration for those solutions needs to be part of this ongoing dispute that from our perspective centers around one industry, mining. If we can develop a vaccine in less than 12 months to battle a pandemic, why don't we invest in a realistic solution to determine a sulfate standard that is based on modern science and not on Dr. Moyles' canoe trip experiment from over 50 years ago and one that has never been enforced?

In closing RAMS on behalf of the 78,000 residents we represent in Northeastern Minnesota objects to the unilateral inclusion of the 30 new bodies of water and partial rejection of the MPCA's impaired water list as submitted to the EPA earlier this year. We encourage the EPA to work with the MPCA to form a wild rice task force to work towards a holistic approach to protecting wild rice or utilize the updated research to revise the standard, so it has the intended result without putting municipal wastewater facilities and industrial employers at risk.

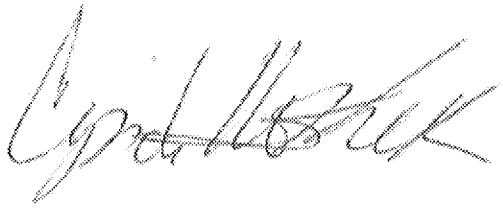
Respectfully,

Range Association of Municipalities & Schools Board of Directors
Steve Giorgi/Executive Director
sgiorgi@ramsmn.org
218.780.8877

Range Association of Municipalities and Schools (RAMS) *The organization represents more than 78,000 residents and 57 public sector units of government, including 27 cities, 15 public school districts and 14 townships, in the 13,000 square mile Taconite Assistance Area (TAA) of northeast Minnesota. As an organization, RAMS has represented the interests of the Iron Range region for over 80 years.*

RAMS Board of Directors

Charlie Baribeau, President
Virginia City Council



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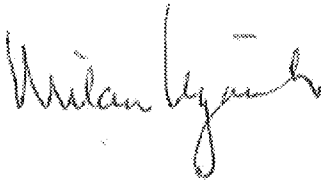
Barb Kalmi, Secretary/Treasurer
Nashwauk Keewatin School Board, ISD #319

Pat Medure
Grand Rapids School Board, ISD #318



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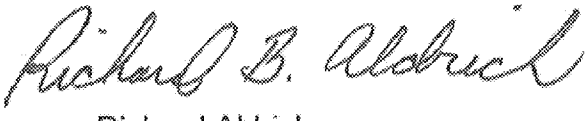
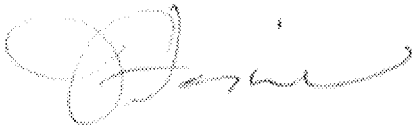
Great Scott Town Board

Jennifer Saccoman-Hoffman
Hibbing City Council

Stuart Lehman
Buhl City Council

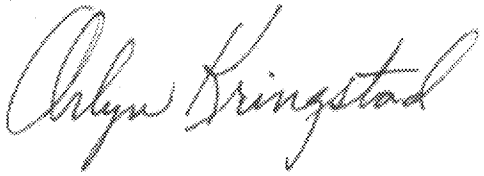


Richard Aldrich
Supt, Hibbing, ISD #701

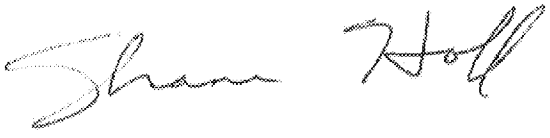


Jim Fisher
McDavitt Town Board

Paul Kess
Ely City Council

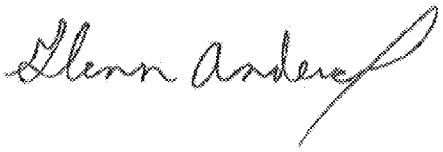


Orlyn Kringstad
Tower City Council



Shane Hoff
Silver Bay City Council

Dr. Noel Schmidt
Supt, Rock Ridge, ISD #2909



Glenn Anderson
Babbitt City Council

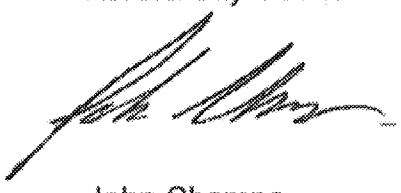
Bob Berrini
Morse Town Board

Ronald Pittman
Cherry Town Board

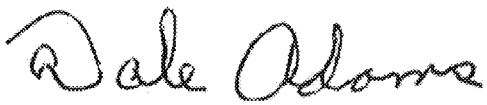
Stacey Sundquist
Virginia School Board, ISD #706

Dave Worshek
Aurora City Council

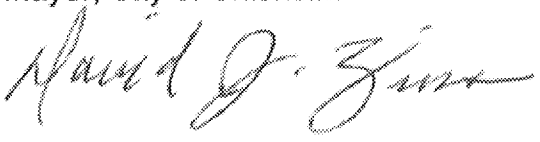
Kim McLaughlin
Hibbing School Board, ISD #701



John Champa
Mayor, City of Chisholm



Dale Adams
Grand Rapids City Council



David Zins
Hoyt Lakes City Council

Warren Stolp
Nashwauk Town Board

Calvin Saari
Mayor, City of Nashwauk

David J. Tomassoni
State Senator - District 6
President Pro Tem
Chair - Higher Education Finance & Policy Committee

Senate
State of Minnesota

June 30, 2021

United States Environmental Protection Agency
Region 5
77 West Jackson Blvd.
Chicago, IL 60604-3590

Re: Addition of Waters to Minnesota's 2020 List of Impaired Waters under Clear Water Act, Section 303(d)

Dear United States Environmental Protection Agency:

We are the eight members of the Minnesota Legislature's Iron Range Delegation in northeastern Minnesota. We represent a region blessed with natural resources that we and our constituents enjoy every day, including the cleanest water in Minnesota. We enjoy a rich history of mining, forestry, logging, and other industries that have supported the families and economies of our region for generations. Our work includes working closely with our local cities, supporting them in their role of using their limited resources to provide important services to their residents. We submit this letter on behalf our region, requesting that the United States Environmental Protection Agency (EPA) withdraw its partial disapproval of Minnesota's 2020 Clean Water Act Section 303(d) list.

The EPA disapproval is a response to the Minnesota Pollution Control Agency's (MPCA) decision to not list any water bodies for sulfate impairment on the Minnesota 2020 Section 303(d) list. The MPCA decision was proper because the Minnesota standard is clearly overly protective and not scientifically supported. The EPA's rejection of that MPCA decision improperly inserts EPA into Minnesota actions to review and revise its water quality standard to protect wild rice. The EPA disapproval must be withdrawn.

We are very concerned that your decision indicates EPA's willingness to directly impose regulatory requirements on our mining industry and cities by enforcing a Minnesota water quality standard that the MPCA has concluded is obsolete and requires revision. The EPA action is irresponsible given clear evidence that enforcement of the standard will produce no predictable benefit to wild rice and that the cost of compliance would cripple our cities and mining industry.

Minnesota State Capitol, Suite 330, St. Paul, MN 55155
651-296-8017 • sen.david.tomassoni@senate.mn

EPA's action also ignores Minnesota law that bars the MPCA from listing wild rice waters as impaired under CWA Section 303(d). In 2015 Governor Mark Dayton signed into law a provision passed by the legislature stating that the MPCA "shall not list waters containing natural beds of wild rice as impaired for sulfate under section 303(d) of the federal Clean Water Act, United States Code, title 33, section 1313" until an updated rulemaking takes effect.[i]

That law was strongly supported by legislators and cities in our region. The EPA action, if not withdrawn, clearly circumvents the policy established in law. Most notably, the law was designed to both prevent enforcement of an obsolete standard and impose on the MPCA an obligation to update that standard. It is troubling that the EPA would attempt to act completely contrary to that Minnesota law. We understand that others may bring legal challenges to the EPA action. Our message to the EPA on that issue is very simple--any productive relationship between the EPA and the State of Minnesota must include EPA respect for Minnesota policy decisions reflected in our laws.

Finally, the EPA must withdraw its decision based on the flawed public involvement process that preceded the decision. We understand that the EPA acted after consulting extensively with a limited group of interested parties while providing no outreach to other stakeholders, including those with active discharge permits to these waters or the general public that use these waters. We expect the EPA to acknowledge that its engagement process for its decision was flawed and request that it undertake more transparent and broad consultation with interested parties in the future.

Northeast Minnesota is the number one iron ore producer in the nation, and our iron industry currently supports more than 4,000 workers with good, family-sustaining jobs. The mining industry has long-served as the backbone of our economy, and it has significant potential to continue to bring incredible growth opportunities to our area in the future. It also can support key priorities of the new administration, including ensuring a robust domestic supply chain, and strengthening economic recovery through job creation—particularly among local unions.

Unfortunately, job growth in our region has declined over the past 15 years, and the detrimental impacts of the Covid-19 pandemic have further exacerbated the economic damage to our area. To ensure we can, not only recover from this decline, but also look forward to a brighter future, we must allow sustainable growth in our mining industry and must support our local cities as they use their limited resources to provide valuable services to our area.

The EPA should respect the State of Minnesota process to review the standard and refrain from interceding until that process is complete and can rest assured that there is strong support for wild rice protection. As just one example, here is what the Governor's Task Force on Wild Rice said in its January 2019 letter to Governor Mark

Dayton: "Although our time together was short, and the Task Force membership was diverse, we did find common ground. We are unified in supporting clean water and healthy wild rice, and in recognizing the importance of the State's meaningful engagement and consultation with Minnesota tribes."

EPA decisions have a direct impact on the people we represent and serve. We ask that the EPA withdraw its intervention into the ongoing Minnesota actions to revise and implement a water quality standard to protect wild rice. The EPA should affirm that those activities are most properly implemented under the direction and support of Minnesota regulatory agencies and important Minnesota stakeholders.

In addition, we ask you to recognize that it is critical that you work with us on any decisions that may impact our region's economic future, particularly for our cities and our mining industry.

Thank you for your consideration, and we hope to work closely with you on key decisions affecting our region moving forward.

Respectfully,

David J. Tomassoni
State Senator

Thomas M. Bakk
State Senator

Justin Eichorn
State Senator

David Lislegard
State Representative

Rob Ecklund
State Representative

Julie Sandstede
State Representative

Dale Lueck
State Representative

Spencer Igo
State Representative

DT:lb

cc: Senator Amy Klobuchar
Senator Tina Smith
Representative Pete Stauber
Governor Tim Walz
Minnesota Control Agency Commissioner Laura Bishop

---

[i] Laws 2015, First Special Session chapter 4 – S.F. No, 5, article 4.

MINNESOTA POLLUTION CONTROL AGENCY

520 Lafayette Road North | St. Paul, Minnesota 55155-4194 | 651-296-6300

800-657-3864 | Use your preferred relay service | info.pca@state.mn.us | Equal Opportunity Employer

June 29, 2021

Tera Fong
Director, Office of Water
EPA Region 5
77 West Jackson Boulevard
Chicago, IL 60604

Re: Public Notice of EPA's Additions to Minnesota's 2020 Impaired Waters List

Dear Ms. Fong:

As home to nearly 12,000 lakes and the headwaters of the Mississippi River, Minnesota takes preserving and protecting its waters very seriously. Government, industry, and individuals take great pride in their work to ensure our lakes, streams, and rivers are fishable, swimmable, and support thriving wetland and aquatic ecosystems. Minnesota is steadfastly committed to safeguarding its abundant waters for future generations to enjoy.

Likewise, Minnesota has more acres of natural wild rice than any other state in the country. Wild rice (*manoomin* in the Ojibwe language, *psiŋ* in the Dakota language) has important social, cultural, nutritional, economic, and historical significance to Minnesotans and Tribal Nations. Minnesota recognizes wild rice as its official state grain and state agencies and Tribal Nations work diligently to protect and manage wild rice waters.

Minnesota also has over 1000 active NPDES permits issued to businesses and municipal facilities. These facilities encompass a wide array of industries and purposes—from mining, to manufacturing, to wastewater treatment. If the EPA's proposed additions to 2020 Impaired Waters List are finalized it will be critical to ensure implementation is done in a way that ensures communities throughout the state will continue to thrive while protecting resources, such as wild rice, vital to the states' economy, culture, and unique environment.

The Minnesota Pollution Control Agency (MPCA) recognizes that numerous waters within the state are impaired for the U.S. Environmental Protection Agency (EPA) approved wild rice sulfate standard. The MPCA also recognizes Minnesota session law prevents the agency from submitting these impairments to the EPA. The EPA's proposed inclusion of sulfate impaired waters to Minnesota's 2020 Clean Water Act Section 303(d) list addresses part of the conflict between the Clean Water Act and Minnesota session law.

The implementation of the wild rice sulfate standard is complex, notwithstanding the remaining conflict between federal and state law. As discussed in more detail in our comment letter there are differences in EPA's proposed assessment methodology for the wild rice sulfate standard and the methods Minnesota uses – or would propose to use - in the preparation of its 303(d) list. Additionally some of the EPA's proposed waters are located in parts of the state with

higher natural background sulfate levels which will likely require the development of site specific standards; more information on this is provided below. It is also important to note that the proposed inclusion of the Mississippi River reaches will require extensive new sulfate monitoring as only 20% of current National Pollutant Discharge Elimination System (NPDES) wastewater permits that discharge upstream have sulfate monitoring.

Our comment letter further addresses implementation challenges and seeks additional guidance from the EPA.

Assessment Methodologies

The development and implementation of an assessment methodology for listing impaired waters is critical. Methods must be carefully crafted to, as much as possible, ensure that they provide an accurate picture of the "true" condition of the waters being evaluated.

There are a number of careful steps the MPCA takes in listing Minnesota waters as impaired. These provide a solid justification for the listing and confidence in the judgment that the water is, in fact, impaired. This is particularly important when considering the conditions of critical natural resources such as wild rice, and when the pollutant at issue (like sulfate) is difficult and expensive to treat.

Two critical steps are 1) vetting of the data and 2) analysis of the data. Vetting involves ensuring the data provides a representative overall picture rather than being biased towards certain conditions, and that it meets necessary quality assurance/quality control (QA/QC) requirements. In this case, QA/QC is completed for any data from MPCA's EQuIS database; completing QA/QC - as defined in quality assurance project plans, standard operating procedures, and data quality assessments - would be a necessary additional step for any data not in EQuIS, including data offered by permittees.

In terms of data analysis, the calculation of the average sulfate concentration from monitored samples is only an estimate of the true average in the water, and it can be a good estimate or a poor estimate. The number of samples is one factor that influences the quality and defensibility of the estimate. In some cases five samples may be sufficient to give a high degree of confidence that the average concentration is greater than 10 milligrams/liter (mg/L), in other cases it may not be sufficient. Assuming quality, unbiased, and representative data as discussed above, the other equally important factor is the variability in the measurements.

MPCA is considering the assessment methodology we may use in the future to assess waters against the wild rice sulfate standard, one that provides confidence the average sulfate concentration from samples collected portrays an accurate picture of what is happening in the water. Initial ideas are to use a method that, rather than just calculating an average and giving a simple yes or no answer to the question of impairment, would use a statistical test to provide a quantifiable and high degree of confidence that the calculated average from the data adequately represents the actual average in the water.

Although MPCA would likely have used a different methodology for the sulfate wild rice standard, we agree with EPA's starting point of the universe of waters – namely those waters that MPCA had proposed to place in rule as wild rice waters in the 2017/2018 rule proposal. Our review and analysis of the data available at this time demonstrates that the outcomes of an assessment decision (impaired/ non impaired) would generally align whether using EPA's methodology, or using methods MPCA would have employed.

MPCA anticipates additional review of EPA's proposed methodology as we prepare Minnesota's 2022 impaired waters list. MPCA will work with Tribes and partners, and ensure appropriate notice to stakeholders, while meeting our commitment to submit the 2022 list on time.

Implementation

If the EPA's proposed additions to Minnesota's 2020 Impaired Waters List are finalized, the MPCA anticipates moving forward on appropriate implementation steps for the waters listed as impaired for the wild rice sulfate standard, primarily in the permitting process, but also in Total Maximum Daily Load studies (TMDLs). Implementation will be complex and resource-intensive, and we look forward to working with Region 5 – particularly the permitting program – to take effective steps forward to improve these waters, reduce sulfate, and meet MPCA's commitments to efficiently issue permits and reduce our backlog. We will work closely with EPA, Tribes and partners, and stakeholders from industry, local government and the environmental community to develop and apply multiple permitting and implementation tools, including site-specific standards and variances.

Natural Background and Site-Specific Conditions

A key concern is that the 10 mg/L wild rice sulfate standard does not take into account the regional variation in natural sulfate levels across the state, or the differing impacts of sulfate based on very site-specific conditions.[1] These variations and site-specific conditions have ramifications for both permits and TMDLs. It will be important to ensure we are working towards the right water quality goals to best protect the wild rice beneficial use in all locations.

It has been clear from the early days of exploring the connection between wild rice and sulfate that Minnesota's climate and geology results in varied regional sulfate concentrations.[2] Dr. Moyle pointed out that sulfate concentrations are naturally low in the arrowhead region, and that sulfate increases by at least an order of magnitude as you move southward and westward from the arrowhead.

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[1] While MPCA is not disputing the applicability of the 10 mg/L wild rice sulfate standard, past research has shown that the standard is often either overprotective or underprotective.

[2] Moyle, John B. "Some chemical factors influencing the distribution of aquatic plants in Minnesota." *The American Midland Naturalist* 34.2 (1945): 402-420.
Moyle, John B. "Relationships between the chemistry of Minnesota surface waters and wildlife management." *The Journal of Wildlife Management* 20.3 (1956): 303-320.

When the 10 mg/L wild rice sulfate standard was developed in the 1970s, it relied upon scientific literature published by Dr. Moyle that held that the wild rice sulfate predictive relationship was applicable in Northeastern Minnesota. Moyle believed that wild rice did not exist or thrive in Minnesota in areas outside of a western limit running from approximately the Twin Cities and then roughly following the 10 ppm line in the figure above. Thus, Moyle never considered how to protect wild rice in areas where surface water sulfate concentrations are naturally above 10 mg/L.

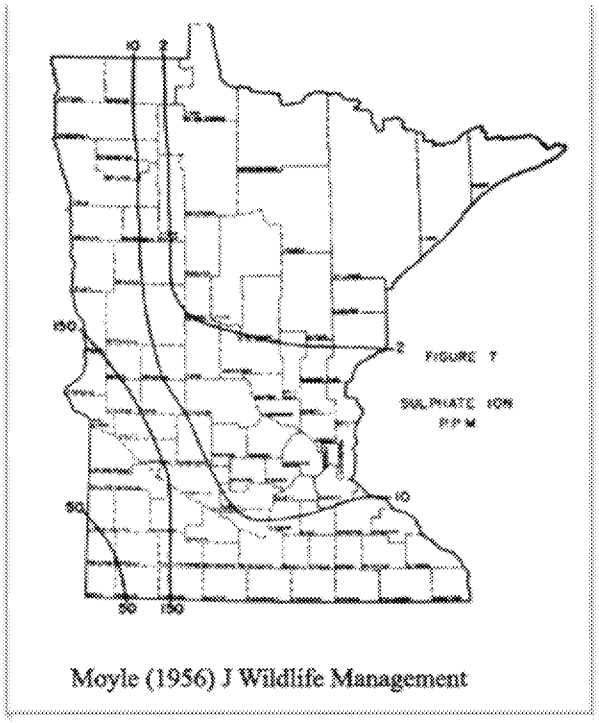


Figure 1. Sulfate Pattern in Lakes Across Minnesota (Moyle, 1956)

Several waters EPA has proposed to list – mainly those located outside of the Northern Lakes and Forest and Northern Minnesota Wetlands ecoregions – are located in areas of naturally higher sulfate. This particularly includes those listings on the lower Mississippi River. Even if all upstream dischargers to these listed water sections (referred to as "WIDs") were eliminated, the waters would naturally have sulfate in exceedance of the 10 mg/L sulfate standard. The inclusion of the Mississippi River WIDs as impaired is particularly crucial for implementation, as these two WIDs drain over 59,200 square miles of the state and 833 NPDES-permitted dischargers are located upstream of them.

The MPCA asks that EPA consider listing, or allowing MPCA to categorize, these waters in a way that recognizes the higher natural background sulfate levels. MPCA has developed, and previously utilized, a Class 4D categorization that recognizes "natural background" and does not require a TMDL. We also hope to discuss the potential for alternative restoration approaches, rather than TMDLs, given the limited non-point sources of sulfate. MPCA will also likely consider site-specific standards for these reaches, due to the natural conditions.

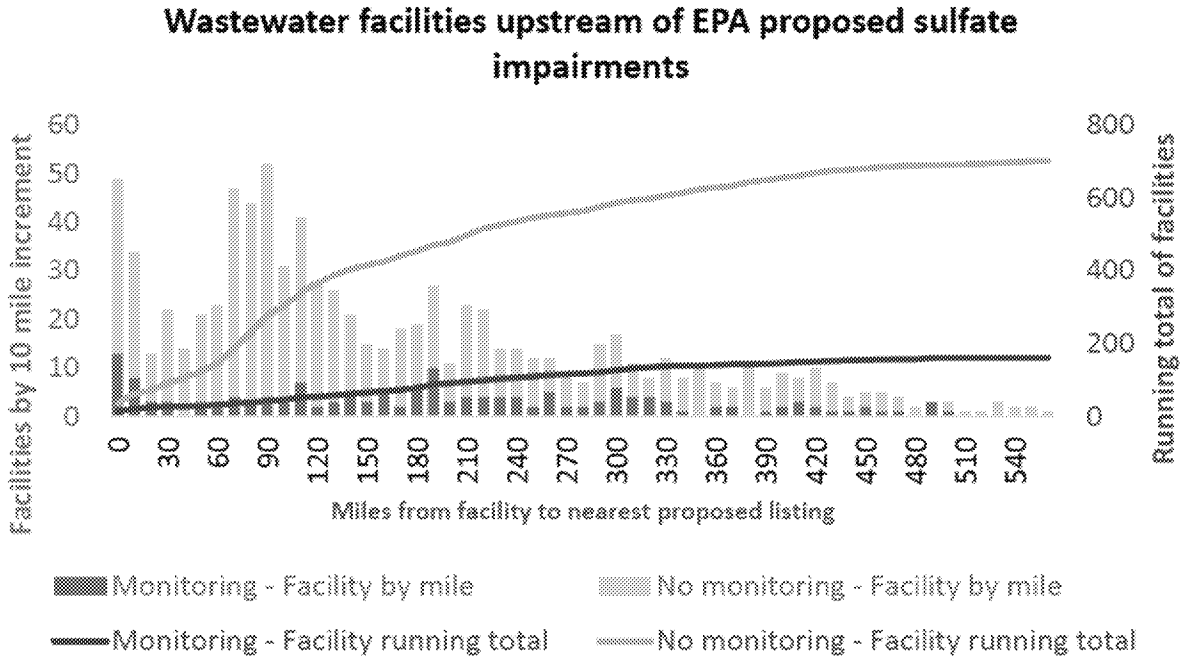
Beyond the big picture geography of sulfate, the MPCA's more recent research shows that sulfate's impacts on wild rice are based on the conversion to sulfide and dependent on the organic carbon and iron in the sediment where the rice roots. The MPCA anticipates that there will be interest, particularly in the ecoregions where sulfate concentrations are naturally 10 mg/L and below, in developing site-specific standards based on this relationship. Where data is available to adequately characterize conditions, it is appropriate to make the best use of the extensive science developed during the 2011 – 2018 study and rulemaking process.

Effluent Limits and Variances

Setting site-specific goals, where warranted, will improve implementation. However, additional tools will be needed to support facility permitting in a way that makes best use of resources (from MPCA staff resources to financial resources) to tackle the biggest sulfate problems.

Initial analysis shows that 863 of Minnesota's 1102 NPDES wastewater permits (78%) are upstream of at least one of the 30 waters EPA has proposed to list, primarily due to the inclusion of the Mississippi River reaches. Only 175 of these permittees currently monitor for sulfate, so the addition of monitoring requirements will be a first step.

Figure 2. Graphical summary of wastewater facilities upstream of a wild rice water by river mile and whether or not the discharger monitors for sulfate.



However, to evaluate even 175 permittees is intensive. The MPCA will need to explore multiple options for phased permitting approaches and use of innovative permitting tools. Sulfate is a conservative pollutant, and may persist long-distances downstream. Due to internal capacity, MPCA will need to make reasonable choices about how far upstream to evaluate dischargers for reasonable potential and the need for effluent limits. (This may be a phased approach, with the distance increasing over time.)

Where effluent limits are needed, there will be a large demand for variances. MPCA has provided multiple analyses of the costs of sulfate treatment over the past few years, and those costs and considerations have not changed. Sulfate treatment is generally unaffordable for municipal wastewater plants, particularly those in small municipalities.

Variances will be needed, and will improve the environment by requiring sulfate reductions through minimization plans. MPCA anticipates building on the tools developed for municipal chloride variances, which has included extensive collaboration with Region 5. This will likely require developing new variance frameworks, including waterbody variances or multi-discharger variances that include mechanisms for wild rice restoration. Wild rice ecology is threatened by numerous complex causes ranging from climate change to landscape alteration and addressing these concerns could benefit the overall health of wild rice.

Additionally, we do expect applications for industrial variances, and will need to work with EPA to ensure appropriate consideration of economic impacts, given that guidance on this topic is limited (as compared to municipal dischargers).

Conclusion

If the EPA finalizes the additions to the state's 2020 impaired waters list, the MPCA anticipates moving forward with implementation of the wild rice standard and is committed to working in coordination and consultation with EPA and Tribes to develop a path forward, and to consider comments and approaches from industry, local government and environmental stakeholders and others throughout this process. Thank you for the opportunity to present these comments.

Sincerely,

Katrina Kessler

Katrina Kessler

Assistant Commissioner

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MINNESOTA CHAMBER OF COMMERCE

GROWING MINNESOTA

June 29, 2021

United States Environmental Protection Agency
Region 5
77 West Jackson Boulevard
Chicago, IL 60604-3590

Re: Addition of Waters to Minnesota's 2020 List of Impaired Waters under Clear Water Act, Section 303(d)

Dear United States Environmental Protection Agency:

The Minnesota Chamber of Commerce (Chamber) is a statewide business organization representing businesses (utilities, mining, manufacturing, services providers, etc.) that will be impacted by the listing of Minnesota waterbodies as impaired for sulfate. The Chamber appreciates the opportunity to comment on the United States Environmental Protection Agency (EPA) *Decision Document Regarding the Sulfate Impaired Waters EPA is Adding to the Minnesota 2020 Clean Water Act Section 303(d) List*.

On March 26, 2021, the United States Environmental Protection Agency (EPA) partially approved and partially disapproved Minnesota's 2020 Clean Water Act (CWA), 33 U.S.C. § 1251 et seq., Section 303(d) list (Minnesota 2020 Section 303(d) list).[1] Specifically, the EPA disapproved of Minnesota's decision not to identify on the Minnesota 2020 Section 303(d) list any water quality limited segments (WQLSs) for sulfate impairment. The EPA stated that Minnesota's decision to exclude these WQLSs with existing and readily available data and information indicating sulfate impairment was inconsistent with CWA Section 303(d) and EPA's implementing regulations.[2] On April 27, 2021, the EPA identified for inclusion on the Minnesota 2020 Section 303(d) list 30 waters impaired for sulfate that still require total maximum daily loads (TMDLs) under CWA Section 303(d) and the implementing regulations at 40 C.F.R. § 130.7.[3]

In general, the Chamber disagrees with the EPA's proposed listing of waters as impaired for sulfate based on:

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[1] EPA *Decision Document for the Partial Approval of Minnesota's 2020 Clean Water Act 303(d) List*, March 26, 2021. [hereafter referred to as EPA Partial Approval Decision Document]

[2] EPA Partial Approval Decision Document

[3] EPA *Decision Document Regarding the Sulfate Impaired Waters EPA is Adding to the Minnesota 2020 Clean Water Act Section 303(d) List*, April 27, 2021. [hereafter referred to as EPA Sulfate Impaired Waters Decision Document]

- None of the 30 waters that the EPA is proposing to add to the Minnesota 2020 Section 303(d) list have been officially designated as wild rice waters and thus it is not appropriate to list them as impaired for sulfate. It is also not the appropriate procedure for the EPA to assign and/or designate beneficial uses for waters as part of their review of a state's impaired waters list.

- Minnesota's existing Class 4A wild rice sulfate water quality standard has been demonstrated to be overly protective and not scientifically supported; as such is inappropriate to enforce.

- The EPA's assessment has overapplied the wild rice sulfate water quality standard both spatially and temporally.

- Assessment and listing of impaired waters in Minnesota under CWA Section 303(d) should be in accordance with the MPCA's *Guidance Manual for Assessing the Quality of Minnesota Surface Waters for Determination of Impairment*, which does not include methodology for assessing sulfate impairments associated with the wild rice beneficial use.

- The EPA Sulfate Impaired Waters Decision Document does not include the specific sulfate water quality data sets used to assess the waters and create the table in Appendix 2: Waters EPA is adding to the Minnesota 2020 303(d) List. Without access to the specific sulfate water quality data sets used by the EPA, it is not possible to assess the quality, appropriateness, or completeness of the data.

- As part of this CWA 303(d) process, both the EPA and MPCA consulted extensively with Tribal Governments and also considered information submitted by WaterLegacy; however, there was limited to no outreach to other stakeholders, including those with active discharge permits to these waters or the general public that use these waters.

Each of these issues associated with EPA's proposed listing of waters as impaired for sulfate is discussed in further detail below.

Waters Proposed as Impaired for Sulfate are not Designated as Wild Rice Waters

Minnesota Rules part 7050.0470 designates 24 waters as wild rice waters.[4] The EPA's review of the Minnesota 2014, 2016, and 2018 Section 303(d) lists appropriately only considered the wild rice sulfate water quality standard for these 24 waters specifically designated as wild rice waters.[5] However, none

[4] Minnesota Rules part 7050.0460, subpart 3 and part 7050.0470, subpart 1

[5] EPA Sulfate Impaired Waters Decision Document, Part I.A

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of the 30 waters that the EPA is currently proposing to add to the Minnesota 2020 Section 303(d) list have been designated in Minnesota Rules part 7050.0470 as wild rice waters.

The MPCA's 2017 proposed rule amendments included a list of approximately 1,300 waters that were proposed to be designated for a wild rice beneficial use.[6] This proposed list of wild rice waters was specifically disapproved by an Administrative Law Judge (ALJ)[7] and the rule amendments were withdrawn.[8] The ALJ's criticism of the MPCA's 2017 proposed list of wild rice waters included that "in making its determinations as to which water bodies would be included in the list, the MPCA did not explicitly apply the standards it intends to use in future rulemakings to determine whether a water body should be added to the list of wild rice waters",[9] but rather "used a weight-of-evidence approach as it reviewed the corroborating evidence from sources to determine if the wild rice beneficial use exists or has existed in a water"[10] in which "many of the supporting documents used in the MPCA's review do not contain complete information about the density or acreage of wild rice".[11]

Despite the documented issues with the MPCA's 2017 proposed list of wild rice waters, both the EPA and the MPCA are now asserting that it is the minimum list of waters to which the wild rice beneficial use applies.[12] This is not an appropriate assertation as the list was disapproved by the ALJ and has not been adopted into Minnesota rule or submitted to the EPA for review as a revision to Minnesota's water quality standards.

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[6] MPCA *Proposed Rules Amending the Sulfate Water Quality Standard Applicable to Wild Rice and Identification of Wild Rice Waters*; Revisor's ID Number 4324 [hereafter referred to as MPCA's 2017 proposed rule amendments]

[7] Chief Administrative Law Judge's Order on Review of Rules, *In the Matter of the Proposed Rules of the Pollution Control Agency Amending the Sulfate Water Quality Standard Applicable to Wild Rice and Identification of Wild Rice Rivers*, April 12, 2018

[8] MPCA, Environmental Analysis and Outcomes Divisions, *Notice of Withdrawn Rules for Proposed Rules Amending the Sulfate Water Quality Standard Applicable to Wild Rice and Identification of Wild Rice Waters*; Revisor's ID Number 4324, April 26, 2018

[9] Chief Administrative Law Judge's Order on Review of Rules, *In the Matter of the Proposed Rules of the Pollution Control Agency Amending the Sulfate Water Quality Standard Applicable to Wild Rice and Identification of Wild Rice Rivers*, April 12, 2018

[10] Report of the Chief Administrative Law Judge, *In the Matter of the Proposed Rules of the Pollution Control Agency Amending the Sulfate Water Quality Standard Applicable to Wild Rice and Identification of Wild Rice Rivers*, January 9, 2018

[11] Report of the Chief Administrative Law Judge, *In the Matter of the Proposed Rules of the Pollution Control Agency Amending the Sulfate Water Quality Standard Applicable to Wild Rice and Identification of Wild Rice Rivers*, January 9, 2018

[12] EPA Sulfate Impaired Waters Decision Document, Parts I.B and II.A

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Designation of beneficial uses should be conducted in accordance with CWA Section 303(c) and promulgated in Minnesota rule. It is not appropriate for the EPA and/or MPCA to circumvent these procedures and it is not appropriate for the EPA to assign and/or designate beneficial uses for waters as part of their review of a state's CWA Section 303(d) list. The EPA has previously indicated they agree that it is not appropriate to use the assessment process established in CWA 303(d) to displace the process for establishing and revising water quality standards outlined in CWA 303(c).[13]

Furthermore, it is critical for the designation of a wild rice beneficial use for a waterbody or segment of a waterbody to be undertaken on a case-by-case basis with a careful review of the evidence as to whether the wild rice beneficial use has been "actually attained in the water body on or after November 28, 1975".[14] For example: The EPA has included the lower portion of the Embarrass River from Esquagama Lake to St. Louis River (WID/AUID 04010201-B00, formerly part of WID/AUID 04010201-577) on their list of waters to be added to the Minnesota 2020 Section 303(d) list as impaired for sulfate.[15] This Embarrass River segment (WID/AUID 04010201-B00) was not included on the MPCA's 2017 proposed list of wild rice waters[16] and was not included on the *1854 Treaty Authority List of Wild Rice Waters*[17], in the Minnesota Department of Natural Resources' (MDNR's) *Wild Rice Harvester Survey Report*[18], or in the MDNR's *Natural Wild Rice in Minnesota – A Wild Rice Study*[19]. Furthermore, a wild rice survey completed in 2017 by Barr Engineering Co. found that wild rice is not present on this segment of the Embarrass River and is unlikely to be present in the future due to a lack of habitat conducive to wild rice growth.[20] This lower portion of the Embarrass River (WID/AUID 04010201-B00) is a clear example of a water included on the EPA's list of waters to be added to the Minnesota 2020 Section 303(d) list that should not be designated with a wild rice beneficial use and thus should not be listed as impaired for sulfate. This example calls into question the entire list of water segments that the EPA is asserting the wild rice beneficial use applies to. Designation or modification of beneficial uses is required to follow a structured and scientific process to ensure that beneficial uses assigned to a

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[13] EPA *Decision Document for the Approval of Minnesota's 2014 Clean Water Act Section 303(d) List*, May 29, 2018, Appendix 2 (p. 3-4)

[14] 40 C.F.R. § 131.3(e)

[15] EPA Sulfate Impaired Waters Decision Document, Appendix 2

[16] EPA Sulfate Impaired Waters Decision Document, Appendix 1

[17] 1854 Treaty Authority *Wild Rice Waters in 1854 Ceded Territory*, March 3, 2021.

[18] Minnesota Department of Natural Resources (MDNR) *Minnesota Natural Wild Rice Harvester Survey: A Study of Harvesters' Activities and Opinions*, December 2007

[19] MDNR *Natural Wild Rice in Minnesota, A Wild Rice Study Document Submitted to the Minnesota Legislature by the Minnesota Department of Natural Resources*, February 15, 2008

[20] ArcelorMittal Minorca, Letter to The Honorable Judge LauraSue Schlatter, *Re: Comments on Proposed Rules Amending the Sulfate Water Quality Standard Applicable to Wild Rice and Identification of Wild Rice Waters (OAH Docket No. 80-9003-34519)*, November 22, 2017, Attachment A, Comment 1

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particular waterbody are appropriate for that waterbody and are based on sound evidence and data; this cannot be accomplished under the scope of a CWA 303(d) listing review.

A water cannot be listed as impaired for a water quality standard associated with a beneficial use that has not been designated for the water. Thus, because the 30 waters the EPA is proposing to add to the Minnesota 2020 Section 303(d) list have not been officially designated as wild rice waters, it is not appropriate to list them as impaired for sulfate.

Minnesota's Overly Protective Existing Wild Rice Sulfate Water Quality Standard is Inappropriate to Enforce

Minnesota's existing Class 4A 10 mg/L sulfate water quality standard "applicable to water used for production of wild rice during periods when the rice may be susceptible to damage from high sulfate levels"[21] has been demonstrated to be overly protective and not scientifically supported. Standard toxicity testing, including that conducted by Dr. John Pastor[22] and Fort Environmental Labs[23] have proven that sulfate, in and of itself, does not impede the growth of wild rice below concentrations of 2,500 mg/L. As such, it is inappropriate to enforce this existing standard. The inappropriateness of enforcing this standard was recognized by the Minnesota State Legislature in 2015/2016 when they decided "the agency shall not list waters containing natural beds of wild rice as impaired for sulfate under section 303(d) of the federal Clean Water Act, United States Code, title 33, section 1313" until an updated rulemaking takes effect.[24]

The inappropriateness of the existing 10 mg/L numeric sulfate standard was also recognized by the MPCA when they proposed in 2017 to replace it with "an equation that translates a protective concentration of sulfide in the sediment porewater to a calculated sulfate concentration in the overlying water that will be protective of wild rice in that particular wild rice water".[25] The MPCA stated that "because of the relationship between sulfate in the water, sulfide in the porewater, and iron and carbon

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[21] Minnesota Rules part 7050.0224, subpart 2

[22] Pastor, J., *Effects of enhanced sulfate and sulfide concentrations on wild rice germination and growth: results from a hydroponics experiment*, December 2013

[23] Fort, D.J., Mathis, M.B., Walker, R., Tuominen, L.K., Hansel, M., Hall, S., Richards, R., Grattan, S.R., and Anderson, K., *Toxicity of Sulfate and Chloride to Early Life-Stages of Wild Rice (Zizania Palustris)*, Journal of Environmental Toxicology and Chemistry, September 2014

[24] Wild Rice Water Quality Standards, Chapter 4 – S.F. No. 5 (2015, 1st Special Session) (Subsection (a)(2)); Sulfate Effluent Compliance, Ch. 165, S.F. No. 3376 (2016, Regular Session)

[25] MPCA *Statement of Need and Reasonableness, Amendment of the Sulfate Water Quality Standard Applicable to Wild Rice and Identification of Wild Rice Waters, Minn. R. Chapters 7050 and 7053*, July 2017 [hereafter referred to as MPCA 2017 proposed rule SONAR], Part 1.D

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in the sediment, an equation is the most accurate approach to protecting wild rice".[26] The MPCA also noted that "wild rice populations had been observed growing in waters significantly greater than 10 mg/L".[27]

The existing 10 mg/L sulfate standard also fails to consider that there are many other factors that impact wild rice. The MPCA has previously acknowledged that sulfate is not the only factor that impacts wild rice growth and health and that "water clarity, water level, and many other factors affect wild rice presence and health".[28] The MPCA has also previously acknowledged "the variability of the conditions for wild rice growth", the existence of "other factors that limit the growth of wild rice (e.g. it will not grow where water levels vary too widely)", and the complex relationships between "the variables affecting wild rice presence and growth".[29] Due to the many complex factors that influence and impact wild rice, the existing standard focused solely on sulfate concentrations is often overly protective and thus inappropriate to enforce.

Overapplication of the Wild Rice Sulfate Water Quality Standard

In the EPA's assessment, they have overapplied the wild rice sulfate water quality standard both spatially and temporally. The Minnesota Class 4A sulfate water quality standard is specifically "applicable to water used for production of wild rice during periods when the rice may be susceptible to damage from high sulfate levels".[30]

The current sulfate water quality standard is only applicable during a portion of the year (specifically "during periods when the rice may be susceptible to damage by high sulfate levels").[31] Wild rice is an annual plant, which germinates in May (+/- 30 days) and senesces in September. Seeds which are not harvested fall to the sediment and lie dormant in the sediment, to germinate the next spring. Several studies have indicated that exceedingly high levels of sulfide would need to be present to impact wild rice seeds and subsequent germination and emergence.[32,33] For these reasons, the current wild rice sulfate standard is a seasonal standard, applicable only during the growing season. In the Mesabi

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[26] MPCA 2017 proposed rule SONAR, Part 1.D

[27] MPCA 2017 proposed rule SONAR, Part 6.E.4

[28] MPCA 2017 proposed rule SONAR, Part 10

[29] MPCA 2017 proposed rule SONAR, Part 6.D.1

[30] Minnesota Rules part 7050.0224, subpart 2

[31] Minnesota Rules part 7050.0224, subpart 2

[32] Pastor, J., *Effects of enhanced sulfate and sulfide concentrations on wild rice germination and growth: results from a hydroponics experiment*, December 2013

[33] Fort Environmental Labs, *Definitive Hydroponics-Based Wild Rice (Zizania palustris) Sulfide Toxicity Testing* (ENVI101-00352), July 2015

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Nugget NPDES/SDS Permit MN0067687 (issued December 28, 2012)[34], the MPCA set a precedent for applying the current sulfate water quality standard seasonally when they "concluded that the 10 mg/L sulfate standard is applicable to portions of the Partridge River used for wild rice production April 1 through August 31".[35] As the standard is not applicable year-round, waters should not be designated as impaired year-round.

Minnesota Class 4A establishes water quality applicable to agricultural waters. Specifically, the quality of Minnesota Class 4A waters is required to be "such as to permit their use for irrigation without significant damage or adverse effects upon any crops or vegetation usually grown in the waters or area, including truck garden crops".[36] This combined with the wild rice standard being specifically "applicable to water used for production of wild rice" indicates that the standard should only apply to wild rice stands of a size and density suitable to support wild rice harvesting. The 24 wild rice waters currently designated in Minnesota Rules part 7050.0470 are listed as such because they have long histories of containing harvestable crops of wild rice.

Typically, only specific portions of a water segment or lake include habitat capable of supporting wild rice. Thus, it is important to consider whether appropriate wild rice habitat exists and where specifically it exists as part of determining whether the sulfate water quality standard is applicable. Based on presence or absence of appropriate habitat [such as appropriate hydrology (e.g., flow, water level), geomorphology (e.g., substrate, bank stability), sediment chemistry, energy sources (e.g., sunlight, nutrients), and other macrophyte populations], it is often inappropriate to apply the sulfate water quality standard to entire water segments or entire lakes. Where there is no wild rice habitat, there should be no sulfate impairment.

Some of the 30 waters the EPA is proposing to add to the Minnesota 2020 Section 303(d) list include segments with no wild rice or wild rice habitat. One example is the previously discussed lower segment of the Embarrass River from Esquagama Lake to St. Louis River (WID/AUID 04010201-B00). Another example is portions of Second Creek (WID/AUID 04010201-952). The EPA has included Second Creek (WID/AUID 04010201-952) on their list of waters to be added to the Minnesota 2020 Section 303(d) list as impaired for sulfate.[37] Wild rice surveys of Second Creek were conducted by Barr Engineering Co. annually from 2013 through 2018. The majority of the 2.5 mile most downstream segment of Second Creek contains no wild rice stands. There is typically a small and sparse area of wild rice approximately

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[34] Mesabi Nugget NPDES/SDS Permit MN0067687 (issued December 28, 2012 to Mesabi Nugget Delaware, LLC), Chapter 1, Part 6.1

[35] MPCA *Mesabi Nugget Delaware, LLC - Request for Approval of Findings of Fact, Conclusions of Law, and Order and Authorization to Grant a Variance and to Reissue National Pollutant Discharge Elimination System/State Disposal System Permit MN0067687*, October 23, 2012, Part II.B.ii

[36] Minnesota Rules part 7050.0224, subpart 2

[37] EPA Sulfate Impaired Waters Decision Document, Appendix 2

2.25 miles upstream of Second Creek's confluence with the Partridge River (not adequate size or density for harvesting of wild rice) and a larger and dense area of wild rice at the downstream end of Second Creek immediately prior to its confluence with Partridge River.[38] Because the majority of this segment of Second Creek has not been documented to contain wild rice stands, it is not appropriate to apply the wild rice beneficial use and associated sulfate water quality standard to the entire segment of the creek. The beneficial use and associated water quality standard should only be applied to the portions of the creek where wild rice has been observed.

It is important to note that many factors impact wild rice abundance other than sulfate. These factors interrelate with whether or not there is appropriate habitat for wild rice. The MPCA asserted during the 2017 proposed rule amendment process (prior to withdrawal of the amendments) that it is not the concentration of sulfate in the water that directly impacts wild rice but rather the concentration of sulfide in the sediment pore water which is depended on both the concentration of sulfate in the overlying water and the concentrations of carbon and iron in the sediment.[39] The MPCA has also previously recognized that many other factors also impact wild rice growth and health, such as water clarity, water level, weather, habitat, invasive species, etc.[40] In addition to these factors, other factors known to affect wild rice abundance include changes in natural hydrology, water level fluctuations, competitive (native) species, human developments and impacts (e.g., shoreline development, boat traffic), disease and diminishing natural generic diversity, climate change, and water level and stream channel alterations due to beaver dam presence and subsequent removal.[41,42,43,44,45,46,47,48,49]

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[38] Barr Engineering Co., *Wild Rice Stand Variability Study*, Prepared for PolyMet Mining, Inc., May 2019

[39] MPCA 2017 proposed rule SONAR, Part 1.B

[40] MPCA 2017 proposed rule SONAR, Parts 10 and 10.E

[41] Wisconsin Department of Natural Resources, *Wetland Restoration Handbook for Wisconsin Landowners* (Chapter 12), 2010

[42] Wisconsin Agricultural Extension Service, *Wisconsin Biology Technical Note 4, Wild Rice Seeding Guidelines*, undated

[43] MDNR, *Natural Wild Rice in Minnesota - A Wild Rice Study document submitted to the Minnesota Legislature*, February 2008

[44] MDNR, *Managing Minnesota's Shallow Lakes for Waterfowl and Wildlife*, December 2010

[45] MDNR, *A Handbook for Collecting Vegetation Plot Data in Minnesota: The Releve Method*, 2007

[46] Poff, N.L., Brinson, M. and Day, J.W., *Aquatic Ecosystems and Global Climate Change*, 2002

[47] Walker, R.D., Pastor, J. and Dewey, B.W., *Effects of wild rice (Zizania palustris) straw on biomass and seed production in northern Minnesota*, Canadian Journal of Botany (84, pp. 1019-1024), 2006

[48] Walker, R.D., Pastor, J. and Dewey, B.W., *Litter quantity and nitrogen immobilization cause oscillations in productivity of wild rice (Zizania palustris) in northern Minnesota*, Ecosystems (13, p. 485:498), 2010

[49] Vogt, D., *Wild Rice Monitoring and Abundance in the 1854 Ceded Territory (1998-2014)*, 1854 Treaty Authority, 2014

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As examples:

- There is a significant difference in the abundance of wild rice between the upper and lower portions of the St. Louis, Partridge, and Embarrass Rivers. The transitions between the upper and lower portions of these rivers has been found to correspond to changes in their physical characteristics (morphology). Wild rice is present in the river reaches where water-level bounce appears mitigated by river features and absent where water-level bounce is not as constrained.[50]

- A study was undertaken for Little Sandy Lake and Sandy Lake to evaluate factors that have or are influencing wild rice growth and identify opportunities to restore wild rice.[51] Multiple adverse influences on wild rice growth and development were identified: 1) general lack of a viable wild rice seed bank in the sediment of the lakes; 2) water depth and fluctuations throughout the lake system is not conducive to wild rice growth and development; and 3) competing aquatic vegetation has become established in large areas of the lake system. A fourth likely adverse influence on wild rice growth and development in the lakes system is natural site-specific sediment conditions unrelated to surface water or sediment pore water characteristics.

As demonstrated by these examples, there are multiple factors that should be considered before applying the wild rice sulfate standard to a water segment or lake. Such considerations should be part of any assessment methodology used for listing of waters as impaired for wild rice sulfate.

Assessment and Listing of Impaired Waters should be in accordance with the MPCA 2020 Assessment and Listing Document

Assessment and listing of impaired waters in Minnesota under CWA Section 303(d) should be in accordance with the MPCA's *Guidance Manual for Assessing the Quality of Minnesota Surface Waters for Determination of Impairment* as developed for the 2020 assessment and listing cycle (MPCA 2020 Assessment and Listing Document).[52] It is our understanding that this document should have been reviewed and approved by the EPA.
The MPCA 2020 Assessment and Listing Document does not include methodology for assessing sulfate impairments associated with the wild rice beneficial use. The EPA Sulfate Impaired Waters Decision

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[50] Poly Met Mining Inc., *Influence of Landscape on Wild Rice Occurrence in the Upper St. Louis River, Partridge River, Embarrass River, Wyman Creek, and Second Creek*, March 2014

[51] Northeast Technical Services, Inc., *U.S. Steel Minntac Twin Lakes Wild Rice Restoration Opportunities Plan Final Report*, February 28, 2019

[52] MPCA *Guidance Manual for Assessing the Quality of Minnesota Surface Waters for Determination of Impairment: 305(b) Report and 303(d) List*, MPCA Document Number: wq-iw1-04k, February 2021

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Document describes the methodology used by the EPA to assess waters for sulfate impairment[53]; however, it is improper to use this methodology as it was not included in the approved MPCA 2020 Assessment and Listing Document.

Furthermore, the methodology used by EPA presents an inconsistency with determining sulfate concentrations. In one scenario, values are averaged while in another, the maximum value is used. Although this inconsistency is an issue, the main concern is the determination to use a maximum sample value to represent sulfate concentrations in waterbodies. This approach could be capturing anomalies in the waterbody with respect to sulfate concentrations. EPA should explain why they used the maximum concentration value observed in certain scenarios, beyond citing a March 15th communication from MPCA (which itself does not provide sufficient justification). In any case, EPA should seek to characterize the average daily conditions of the waterbody when determining appropriate sulfate concentrations for waterbody segments, which will be more indicative of whether sulfate concentration will impact wild rice habitat.

EPA Decision Document Does Not Include Sulfate Water Quality Data Sets Used to Assess Waters

The EPA Sulfate Impaired Waters Decision Document does not include the specific sulfate water quality data sets used to assess the waters and create the table in Appendix 2: Waters EPA is adding to the Minnesota 2020 303(d) List. Sulfate water quality data sets received from others are included in Appendix 3 (received from Tribes) and Appendix 4 (received from WaterLegacy); however, based on the narrative in the EPA Sulfate Impaired Waters Decision Document[54] and comparison of the Appendices 3 and 4 data sets with the data summaries presented in the Appendix 2 table, it appears that the EPA also used other data that are not included with the EPA Sulfate Impaired Waters Decision Document.

Without access to the specific sulfate water quality data sets used by the EPA, it is not possible to assess the quality, appropriateness, or completeness of the data. It falls upon the stakeholders to attempt to reconstruct the data analysis undertaken by the EPA without certainty that they are considering the same data. If the EPA is confident in their assessment of these waters, it would be prudent for them to make the associated data sets available for scrutiny.

Furthermore, in limiting access to full and complete sets of data, EPA also failed to provide the equations used to calculate sulfate concentrations. This exacerbates stakeholders' inability to replicate the methodology. EPA should provide the full set of equations and calculations along with the full and complete data sets.

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[53] EPA Sulfate Impaired Waters Decision Document, Part III.A

[54] EPA Sulfate Impaired Waters Decision Document, Part III.A

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MINNESOTA CHAMBER OF COMMERCE
GROWING MINNESOTA

Transparency of the 303(d) Process

As part of this CWA 303(d) process, both the EPA and MPCA consulted extensively with Tribal Governments[55] and also consulted with and considered information submitted by WaterLegacy[56]; however, there was limited to no outreach to other stakeholders. The listing of Minnesota waterbodies as impaired for sulfate will impact many other stakeholders that have active discharge permits to these waters or otherwise use these waters, including municipalities, businesses (including those represented by the Minnesota Chamber of Commerce), and the general public. We respectfully request that both agencies undertake more transparent and equitable consultation with potentially effected stakeholders.

The Chamber urges the EPA to reconsider their proposed listing of waters as impaired for sulfate. The current proposal is inconsistent with the Clean Water Act in that it applies a water quality standard to waters that have not been officially designated with the associated beneficial use; enforces a sulfate water quality standard that has been demonstrated to be overly protective and not scientifically supported; overapplies the wild rice sulfate water quality standard both spatially and temporally; does not follow approved methodology for assessment and listing of impaired waters in Minnesota; and has lacked transparency by not including the specific sulfate water quality data sets used to assess the waters and including limited to no outreach to stakeholders other than Tribal Governments.
Thank you for the opportunity to provide comments on the EPA *Decision Document Regarding the Sulfate Impaired Waters EPA is Adding to the Minnesota 2020 Clean Water Act Section 303(d) List*.

Please do not hesitate to contact me for clarification or discussion at 651-292-4668 or tkwilas@mnchamber.com.

Respectfully submitted,

Tony Kwilas
Director, Environmental Policy
Minnesota Chamber of Commerce

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[55] EPA Sulfate Impaired Waters Decision Document, Part IV

[56] EPA Sulfate Impaired Waters Decision Document, Part V

[1] wq-s6-59-10

June 30, 2021

Paul Proto
United States Environmental Protection Agency
Proto.paul@epa.gov

Dear Mr. Proto,

Thank you for the oppotunitiy to provide comments and please accept this letter as public comments from the City of Red Wing on the EPA's proposed additions to the Minnesota's 2020 Impaired Waters List. The City of Red Wing is dedicated to the preservation of our water resources and commited to compliance with our NPDES wastewater discharge permit (MN0024751). The Mississippi River segments with the AUID of 07040003-627 and AUID 07060001-509 should not be listed for a sulfate impairment for wild rice waters due to the inappropriate application of the 10 mg/L sulfate standard. Listing these water body segments may render the City of Red Wing incapable of providing safe, effective, and economically feasible treatment to comply with environmental regulations in the future and the expense of numerous resources that will not result in any water quality improvement.

Comments on EPA 303(d) List Addition of Wild Rice Waters

A. Basis for Listing Additional Waters Not Supported

The EPA identified 30 water quality limited segments (WQLS) still requiring TMDLs under Section 303(d) of the Clean Water Act, identified in Appendix 2 of the Decision Document.[1] (Decision Document at 1). Appendix 2 identifies the 30 water quality limited segments and provides information on ambient sulfate concentration, which was then compared against the water quality criterion of 10 mg/L to determine whether the standard was exceeded. (Decision Document at 2).

> In addition to the other water quality criteria listed in Minn. R. 7050.0224, the second subpart of this rule states that the Class 4A sulfate criterion of 10 mg/L is "applicable to water used for the production of wild rice during periods when the rice may be susceptible to damage by high sulfate." Minn. R. 7050.0224, subp. 2. Therefore, the State's criterion at Minn. R. 7050.0224, subpart 2 contains a two-part test: The first part requires that waters designated for the use are those "used for the production of

[1] Decision Document Regarding the Sulfate Impaired Waters EPA is Adding to the Minnesota 2020 Clean Water Act Section 303(d) List.

> wild rice"; while the second part provides that the sulfate criterion of 10 mg/L will be "applicable to water used for the production of wild rice during periods when the rice may be susceptible to damage by high sulfate."

However, this truncated assessment failed to properly apply the "applicable standard" in determining whether or not waters designated for the propagation of wild rice should be considered impaired. See, 40 CFR 130.10(d)(4).[2] To properly apply the 10 mg/l sulfate ambient concentration, Minn. R. 7050.0224 Subp.2 further clarifies that the 10 mg/L sulfate standard "shall be used as a guide in determining the suitability of the waters for such uses". (Emphasis provided) Thus, the rule does not contemplate the strict, direct application of the 10 mg/L sulfate standard as the basis for assessing whether use of the water for the production of wild rice is impaired. The 10 mg/l sulfate concentration is merely a screening tool for further evaluation – not a strict criteria requiring compliance. The factors known to significantly influence the impact of an ambient sulfate concentration include pore water levels and amount of iron in the sediment – which are not evaluated by measuring the overlying water concentration. Further analyses of ambient conditions affecting the ability of sulfate to reduce wild rice growth are required which EPA failed to undertake, rendering its decision arbitrary and capricious. (*Motor Veh. Mfrs. Ass'n v. State Farm Ins.*, 463 U.S. 29 (1983) – failure to consider an important factor renders agency analyses in violation of the Administrative Procedures Act).

For example, MPCA has noted that iron in the sediment may remove sulfide, thus supporting the production of wild rice in waters high in sulfate despite ambient levels in excess of 10 mg/l sulfate. (See, Final Technical Support Document: Refinements to Minnesota's Sulfate Water Quality Standard to Protect Wild Rice. MPCA. August 11, 2017. at 40). For this reason, MPCA has not listed waters as impaired, simply because an ambient concentration in excess of 10 mg/l has been monitored.

MPCA's Technical Support Document provided information from toxicity tests to further elucidate the toxicity of sulfate to wild rice by exposing wild rice to a series of sulfate concentrations over multiple years.

> Even after five years of sulfate additions the 50 mg/L treatment (which had produced an actual average surface water sulfate concentration of 41 mg/L, less than the target of 50 mg/L because sulfate kept being converted to sulfide in the sediment) had no statistically significant effect on the most sensitive endpoints, seedling survival, seedling germination, and final plant biomass (Pastor et al., 2017)

This information should have been considered, but was not, in applying the 10 mg/l concentration "as a guide." Information provided in Appendix 2 of the Decision Document shows that Wild Rice waters in the Mississippi River (AUID 07040003-627; AUID 07060001-509) exhibit mean sulfate concentrations of 36.8 mg/L and 16.6 mg/L, respectively, which EPA claimed served as a sufficient basis for declaring the waters impaired. However, no information is presented to show that wild rice production in these waters is actually adversely affected by the ambient concentration, as is required by the adopted concentration or that the conditions that render the sulfate level non-toxic do not exist at this location. Such a determination should be relatively easy if the 10 mg/L guide concentration is appropriate. Alternatively, the evaluations

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[2] For the purposes of listing waters under § 130.10(d)(2), *applicable standard* means a numeric criterion for a priority pollutant promulgated as part of a state water quality standard. Where a state numeric criterion for a priority pollutant is not promulgated as part of a state water quality standard, for the purposes of listing waters "applicable standard" means the state narrative water quality criterion to control a priority pollutant (e.g., no toxics in toxic amounts) interpreted on a chemical-by-chemical basis by applying a proposed state criterion, an explicit state policy or regulation, or an EPA national water quality criterion, supplemented with other relevant information. 40 CFR 130.10(d)(4).

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provided by Pastor et al (2017) would suggest that no adverse effects would occur at these concentrations. Before these waters are listed as impaired for wild rice production, the condition of the wild rice beds should be ascertained to confirm that the 10 mg/L standard is appropriate for determining the suitability of these segments for wild rice production.
Due to the lack of required additional analyses, EPA should withdraw the proposed impairment listings and reevaluate their need on a location specific basis, as required by the adopted state rule.

B. Conditions in the Mississippi River

Water quality data collected by the USGS for the Mississippi River and several of its major tributaries indicates that sulfate conditions in the river are a result of natural conditions. The Minnesota Department of Natural Resources[3] reports that high concentrations of sulfate in ground water in the west part of the State are probably caused by leaching of sulfate-rich minerals, such as gypsum and iron sulfide from the drift section. In addition, sodium sulfate waters occur in the Cretaceous sediments southwest of the Minnesota River. Such information indicates that wild rice growing in such areas would be resistant to elevated sulfate – or it would not exist in these areas.
The Mississippi River waters that support Wild Rice production are located near the Winona, MN gaging station. These waters have elevated levels of sulfate that are derived from tributaries originating in Minnesota, particularly the Minnesota River.

USGS Water Quality Monitoring Data

Mississippi River	Tributary	Drainage Area (sq. mi)	Observations	Avg. Sulfate (mg/L)
Grand Rapids		3370	43	9.1
Royalton		11600	223	8.73
	Crow River	2640	61	56.62
	Minnesota River	16200	287	157.35
St. Paul		36800	62	41.87
	Croix River	7650	2	4.22
Winona		59200	191	29.23

The Clean Water Act does not consider water quality due to natural conditions to be regulated under the Act. (40 CFR Part 131). Under the Act and its implementing regulations (as well as Minnesota's adopted standards), natural conditions define acceptable, not unacceptable water quality. Where natural conditions preclude attainment of a numeric water quality objective, that natural water quality becomes the default standard.
Based on the widespread occurrence of naturally elevated sulfate levels in the Mississippi Basin, no waters in this area should be considered "impaired" pending the further evaluation of this condition and its causes occurs.

Thank You,

Kay Kuhlman

Kay Kuhlman
Council Administrator
City of Red Wing

[3] MDNR. 1974. Bulletin 26. The Natural Quality of Ground Water in Minnesota.

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Fond du Lac Band of Lake Superior Chippewa

Resource Management Division

1720 Big Lake Rd
Cloquet, MN 55720
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Administration
Conservation
Enforcement
Environmental
Forestry
Fisheries
Natural Resources
Wildlife

Paul Proto
proto.paul@epa.gov
US Environmental Protection Agency
77 W Jackson Blvd
Chicago, IL 60604

June 29, 2021

Re: Comments on Appendix 2 of EPA's Decision Document Regarding the Sulfate Impaired Wild Rice Waters EPA is Adding to the Minnesota's 2020 CWA Section 303(d) List).

Dear Mr. Proto:

The Fond du Lac Band of Lake Superior Chippewa sincerely appreciates EPA's effort to develop a list of sulfate impaired wild rice waters. We signed onto a joint comment letter supported by the Minnesota tribes, and submit this brief communication in support of the recommendations in that joint comment letter for additional wild rice waters to be added to the list of impaired waters, and for other vulnerable wild rice waters to be monitored expeditiously to determine whether they may also be impaired, and eligible for listing in the next biennium.

We agree that EPA's overall approach to evaluating wild rice waters for impairment was systematic and well-reasoned, using existing, readily available data to assess as many wild rice waters as is currently possible. The Tribes have also conducted additional analysis using the same criteria but with certain other data sets that may not have been made available to EPA in its initial review, presenting evidence for additional impaired wild rice waters to be included on the 2020 List, or the necessary data collected for future consideration. We appreciate additional time and opportunity to supply water quality data and maps identifying the date and locations the samples were collected in order to address this identified deficiency.

In particular, the Band urges EPA to include the identified WQLS in Birch Lake and the Kawishiwi River, and in the estuary of the St. Louis River on the 2020 List of Impaired Wild Rice Waters. In the case of Birch Lake, we are concerned about uncontrolled legacy mining waste currently impacting known wild rice stands, while a newly proposed copper-nickel sulfide mine in the watershed is undergoing environmental review. Regarding the lower St. Louis River, tribes are leading multi-agency (tribal/state/federal) efforts to restore critically diminished stands of historically abundant wild rice as part of the St. Louis River Area of Concern remediation and restoration plan, but our efforts are hampered in part by elevated sulfate loadings from upstream sources.

We also urge the agency to carefully consider all wild rice survey data collected by Minnesota taconite facilities at the explicit direction of the MPCA in the 2008-2012 time period *specifically* to assist the state agency in identifying wild rice waters that were potentially impacted by mining pollution, so that their long-expired NPDES/SDS permits could be updated with appropriately protective water quality-based effluent limits (WQBELs). Unfortunately, after ten years, the tribes are still awaiting the issuance of modern and protective water quality discharge permits for these facilities, and the clear degradation or in some cases, extirpation of downstream wild rice stands continues unabated.

Minnesota tribal staff have, for over a decade, engaged in coordination and consultation with the MPCA over a broad array of the agency's Clean Water Act (CWA) responsibilities related to the protection of wild rice, including the need for adequate efforts to collect data for assessing this beneficial use (with the offer of tribal coordination and collaboration), and establishing and enforcing protective WQBELs in permits to protect wild rice waters downstream of high-sulfate dischargers. More recently, we engaged in formal consultation that included tribal leaders and representatives from the Minnesota Governor's office, specifically to encourage the agency to fulfill its CWA obligations through the listing of wild rice waters known to be in exceedance of the state's wild rice sulfate criterion. We shared our own wild rice assessment methodologies from our tribal water quality standards programs, and pointed out the state's own assessment process could easily be adapted to include assessment for this beneficial use. We have consistently urged the MPCA, as part of its comprehensive and well-funded statewide water quality monitoring program to specifically include monitoring for sulfate and to update the state's inventory of wild rice waters.

Unfortunately, none of these recommendations have been undertaken, and we turn to the EPA in its CWA oversight capacity to ensure this sensitive and irreplaceable natural and cultural subsistence resource is fully protected. We look forward to continued collaboration with EPA to ensure that robust monitoring and assessment for wild rice waters occurs, and where impairments are identified, the necessary restoration efforts and protection through permit limits are fully implemented.

Sincerely,

Nancy Schuldt

Nancy Schuldt, Water Projects Coordinator
Fond du Lac Environmental Program

Cc: Patina Park, Tribal State Relations Systems Implementation (email only: patina.park@state.mn.us)
Laura Bishop, MPCA Commissioner (email only, Laura.Bishop@state.mn.us)
Katrina Kessler, MPCA (email only: katrina.kessler@state.mn.us)
Helen Waquiu, MPCA (email only: helen.waquiu@state.mn.us)
Catherine Neuschler, MPCA (email only: catherine.neuschler@state.mn.us)
Barbara Wester, US EPA Region 5, Office of Regional Counsel (email only: wester.barbara@epa.gov)
Tera Fong, US EPA Region 5, Water Division Director (email only: Fong.Tera@epa.gov)
Alan Walts, US EPA Region 5, Office of International and Tribal Affairs (email only: walts.alan@epa.gov)
Sarah Strommen, MN DNR Commissioner (email only: commissioner.dnr@state.mn.us)
Bradley Harrington, MN DNR (email only: bradley.harrington@state.mn.us

COALITION OF GREATER MN CITIES

DEDICATED TO A STRONG GREATER MINNESOTA

June 29, 2021

Paul Proto
proto.paul@epa.gov

RE: Public Notice of EPA's additions to Minnesota's 2020 Impaired Waters List

Dear Mr. Proto,

On behalf of the Coalition of Greater Minnesota Cities (CGMC), I would like to offer the following comments on the Environmental Protection Agency (EPA)'s additions to Minnesota's 2020 Impaired Waters List. CGMC is an organization made up of more than 100 cities located throughout Minnesota. Our organization has a strong interest in the additions proposed by the EPA because many of our member cities could be impacted through their wastewater facilities.

Cities play an important role in protecting Minnesota's waters, primarily through their wastewater systems. Our cities take great pride in this work, and they are committed to doing their part to ensure our waters are clean and protected. However, it becomes increasingly expensive to keep Minnesota's waters clean as infrastructure ages and the regulatory burden expands.

Given the enormous potential cost of complying with sulfate effluent limits that could result from EPA's decision to designate a waterbody as impaired based on Minnesota's Wild Rice Sulfate Standard, it is essential that EPA ensure that any impairment designations are based on the best available science and apply the standard as adopted. Unfortunately, the proposed additions to the impairment list are based on EPA's misapplication of the Minnesota Pollution Control Agency's (MPCA) outdated standard. In addition, the proposed additions include waterbodies for which EPA has not confirmed nor has adequate evidence of harm to the use and production of wild rice resulting from human-caused sulfate concentrations before a waterbody is listed as impaired.

As a result, we are concerned that EPA's proposed action could force cities to make expensive infrastructure upgrades that are not necessary to protect wild rice or wild rice waters. Therefore, we urge you to withdraw your proposed additions and work with the state of Minnesota, the impacted Tribal Nations, and other stakeholders to develop a better mechanism for protecting wild rice.

Additions to the Impaired Waters List Are Based on a Misapplication of an Outdated Standard

In adding these 30 waters to Minnesota's Impaired Waters list, EPA applies the outdated standard of 10 mg/l[1] while also relying on selective portions of a rejected and withdrawn 2017 rulemaking to circumvent some of the flaws in the outdated rule. For example, EPA applies the 10 mg/l standard as a bright line test when the language of the rule clearly states it should be used only as guidance.[2] EPA ignores that the rule applies only to waters designated as wild rice waters by relying on a list rejected

[1] EPA Decision Document for The Partial Approval of Minnesota's 2020 Clean Water Act Section 303(d) List, March 26, 2021 ("EPA 2020 Decision Document") at 1.
[2] Minn. R. 7050.0224 (2020).

by the ALJ. It also ignores that the 10 mg/l limit applies only "during periods when the rice may be susceptible to damage by high sulfate levels" by claiming that the data in the 2017 SONAR demonstrates wild rice is vulnerable year-round.[3]

EPA's reliance on the SONAR of the rejected rule is particularly problematic because the application is selective and ignores the data and overriding conclusion of the rulemaking – that the relationship between wild rice and sulfate is complex and that the 10 mg/l rule will be overprotective in many circumstances.[4] By selectively relying on portions of the SONAR to apply the outdated rule, EPA is being overprotective and declaring waters impaired where the growth of wild rice is supported.

Misapplying the Wild Rice Sulfate Standard May Harm Other Water Bodies

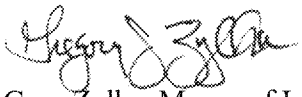
Adding a water body to the impairment list when it is unnecessary to protect water quality is not without consequences. Placement on that list may result in load allocations in our wastewater facilities' NPDES permits, which in turn could require expensive upgrades.

Our cities are committed to maintaining and improving Minnesota's water quality, but their resources are not limitless. One of the challenges with sulfate is that removing it from wastewater effluent is prohibitively expensive, as recognized by the MPCA in its SONAR. The burden of replacing aging water infrastructure and upgrading to meet an ever-growing list of regulatory changes is high, and our communities' resources must be invested wisely. Requiring a facility to comply with stringent sulfate requirements could hamper the facility's ability to address other pollutants.

We respect the concerns about the quality of wild rice waters raised by several representatives of Tribal Nations and other groups. However, it is important that the wild rice sulfate rule be applied in a manner that is neither over-protective nor under-protective of wild rice. Rather than moving forward, we urge you to withdraw your proposed additions and work with the State of Minnesota, the impacted Tribal Nations, and other stakeholders to develop a better mechanism for protecting wild rice.

Thank you for the opportunity to comment. Responses to any of the foregoing may be provided to my attention at mayor@cityoflittlefalls.com. Please also copy any such responses to CGMC's attorney for this matter, Elizabeth Wefel, at eawefel@flaherty-hood.com.

Sincerely,



Greg Zylka, Mayor of Little Falls
President, Coalition of Greater Minnesota Cities

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[3]EPA, Decision Document Regarding the Sulfate Impaired Waters EPA is Adding to the Minnesota 2020 Clean Water Act Section 303(D) List, March 26, 2021at 13.

[4] Minnesota Pollution Control Agency, Statement of Need and Reasonableness, Amendment of the sulfate water quality standard applicable to wild rice and identification of wild rice waters. Minn. R. chapters 7050 and 7053, 2017 ("SONAR") at 16 ("Compared to a fixed sulfate standard, an equation results in fewer waters where the required sulfate levels will be either over-protective (more stringent than needed to protect wild rice) or under-protective (not sufficiently stringent to protect wild rice).").

INTERNATIONAL UNION OF OPERATING ENGINEERS

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To: U.S. Environmental Protection Agency (EPA)
From: Nathaniel Runke- Regulatory & Political Affairs Coordinator, IUOE, Local 49
Date: June 28, 2021

Paul Proto,

On behalf of the International Union of Operating Engineers, Local 49 which represents over 14,000 heavy equipment operating engineers across Minnesota, North Dakota, and South Dakota, I am submitting the following comment.

I ask that the EPA rescind the proposed list of 30 waters and fully approve the Minnesota Pollution Control Agency's (MPCA) 303(d) impaired waters listing as it was proposed to the EPA. The list submitted by the MPCA complies with the Clean Water Act and is consistent with lists provided in previous years which the EPA approved. The EPA must recognize that until waters have been properly designated and criteria established to determine impairment, the MPCA should be responsible for the decision regarding implementation of the wild rice sulfate standard, which is a state-level rule, not a federal regulation.

This decision has broad economic implications for Minnesota communities, governments, and the hardworking men and women across the state. This is an issue that needs to be decided with the input of all Minnesotans in a transparent and open process. We cherish our native wild rice and want to see it continue to thrive and prosper. The approach being taken by the EPA may not do anything to support our wild rice, yet it could have significant negative impacts on our economy and jobs.

We ask that you please reconsider.

Thank you for your time and consideration.

Nathaniel J Runke
Regulatory & Political Affairs Coordinator
International Union of Operating Engineers, Local 49

Paula Goodman Maccabee, WaterLegacy Advocacy Director and Counsel
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June 30, 2021

Paul Proto (proto.paul@epa.gov)
Region 5
United States Environmental Protection Agency
77 West Jackson Boulevard
Chicago, IL 60604

RE: Comments on EPA's April 27, 2021 Decision Document Regarding the Sulfate Impaired Waters EPA is Adding to the Minnesota's 2020 CWA Section 303(d) List.

Dear Mr. Proto

These comments are submitted on behalf of WaterLegacy and Northeastern Minnesotans for Wilderness ("NMW"). We and the thousands of Minnesotans we represent support the oversight exercised by the U.S. Environmental Protection Agency ("EPA") under the Clean Water Act ("CWA") to partially disapprove Minnesota's 2020 CWA Section 303(d) impaired waters list on March 26, 2021 and to propose listing of an initial 30 Water Quality Limited Segments ("WQLS") as impaired due to sulfate affecting their beneficial use for wild rice.

EPA's action was not only welcome, but obligatory under the CWA. For decades, the Minnesota Pollution Control Agency ("MPCA") has violated the CWA by failing to list wild rice waters impaired due to sulfate in excess of Minnesota's federally approved water quality standard of 10 milligrams per liter ("mg/L").

WaterLegacy has requested EPA intervention to list wild rice sulfate impaired waters since 2014. On October 22, 2020, WaterLegacy wrote to EPA Region 5 Regional Administrator Kurt Thiede and Water Division Director Tera Fong requesting that EPA assume oversight of Minnesota's Section 303(d) process and list wild rice waters impaired due to sulfate. With that letter, we provided exhibits reflecting MPCA's failure to list wild rice waters. We received no response.

On March 12, 2021, WaterLegacy wrote to EPA Region 5 Acting Regional Administrator Cheryl Newton and Director Fong, copying David Pfeifer and Paul Proto, requesting that EPA exercise its authority under the CWA, partially disapprove Minnesota's 2020 impaired waters list due to failure to list wild rice waters impaired by sulfate, and list sulfate impaired waters. Both this March 12, 2021 letter and attachments and the documents enclosed with an email to Barbara Wester on April 14, 2021 have been submitted as part of WaterLegacy's comments in this administrative record. We rely on these prior records and incorporate them by reference.

NMW is committed to the protection of the Boundary Waters Canoe Area Wilderness, which requires the protection of its watersheds in northeastern Minnesota. NMW conducts water quality monitoring in Birch Lake and submits with these comments a report of its protocols and 2020-2021 sulfate data.

These comments by WaterLegacy and NMW seek to reinforce the EPA's actions to date in partially disapproving Minnesota's 2020 CWA Section 303(d) list and listing an initial 30 wild rice waters as sulfate impaired WQLS. These comments also seek the additional listing of 20 additional wild rice WQLS impaired due to sulfate, as summarized in the Exhibit A spreadsheet.

The discussion below supports EPA's non-discretionary duty under the CWA to disapprove Minnesota's failure to list wild rice WQLS impaired due to sulfate in Minnesota's 2020 Section 303(d) list. The CWA also requires that EPA's listing of sulfate impaired wild rice waters be an independent decision based on all readily available data. The discussion provides additional support for two of the specific WQLS proposed by EPA and then explains the grounds for listing the additional 20 wild rice sulfate impaired waters summarized in Exhibit A.

DISCUSSION

1. EPA had a non-discretionary duty to partially disapprove Minnesota's 2020 CWA Section 303(d) list and list wild rice WQLS impaired due to sulfate.

The CWA requires that states identify all waterbodies within their boundaries that do not meet or are not expected to meet water quality standards. 33 U.S.C. § 1313(d)(1)(A); 40 C.F.R. § 130.7(b)(1). EPA is then required to either approve or disapprove the state's impaired waters listings not later than 30 days after the date of submission. 33 U.S.C. § 1313(d)(2); 40 C.F.R. § 130.7(d)(2). EPA is authorized to approve a state impaired waters list "only if it meets the requirements" of the CWA. 40 C.F.R. § 130.7(d)(2). If the EPA disapproves the state's listing of impaired waters, the EPA has another 30 days after the date of disapproval to identify impaired waters in the State. *Id.*

MPCA's 2020 CWA Section 303(d) list failed to list any wild rice WQLS impaired due to sulfate. MPCA has a valid water quality standard limiting sulfate to 10 mg/L in waters used for the production of wild rice ("wild rice waters"), Minn. R. 7050.0224, subp. 2, and there are many Minnesota wild rice waters where the state water quality standard is exceeded.

Under the CWA, Minnesota's numeric sulfate standard applies when the use of waters for wild rice is an existing use since November 28, 1975. 40 C.F.R. § 131.3(e) ("Existing uses are those uses actually attained in the water body on or after November 28, 1975, whether or not they are included in the water quality standards."). The Minnesota Court of Appeals has determined that Minnesota's wild rice sulfate rule must be applied under the CWA, even if the Legislature may limit its effect on state-only programs, stating "The wild rice rule is a water-quality standard that is subject to enforcement under the CWA, including through the NPDES permitting program." *In re Reissuance of an NPDES/SDS Permit to U.S. Steel Corp.*, 937 N.W.2d 770, 788 (Minn. App. 2019).

States cannot "shirk their responsibility" for listing impaired waters "simply by claiming a lack of current data." *Sierra Club, Inc. v. Leavitt*, 488 F.3d 904, 913 (11th Cir. 2019). When the EPA disapproves a state's impaired waters list, the EPA has a non-discretionary duty to issue its own list. *Id.* at 908; 33 U.S.C. § 1313(d)(2); 40 C.F.R. §130.7(d)(2).

2. EPA's listing of Minnesota wild rice WQLS impaired for sulfate is an independent decision under the CWA based on beneficial use and all readily available data.

Once the EPA has disapproved a state's Section 303(d) list for failure to list WQLS, the EPA has an independent responsibility to "identify such waters in such State and establish such loads for such waters *as he determines necessary* to implement the water quality standards applicable to such waters." 33 U.S.C. § 1313(d)(2) (emphasis added); 40 C.F.R. § 130.7(d)(2) ("identify such waters in such state. . . as determined necessary to implement applicable WQS"). EPA's duty is neither based on MPCA's process, timing, or methodology. A reviewing court will evaluate EPA's decision, not the methodology used by the state. *Sierra Club v. Leavitt*, 488 F.3d at 913.

As detailed in Attachments A through C to WaterLegacy's March 12, 2021 letter to EPA, MPCA's process for limiting wild rice waters based on acreage and density, is inconsistent with the CWA and would exclude hundreds if not thousands of Minnesota waters for which wild rice is or has been an existing beneficial use at any time since November 28, 1975. The Administrative Law Judge and Chief Administrative Law Judge who reviewed MPCA's proposed rulemaking both found that MPCA's proposed list of approximately 1,300 wild rice waters was impermissibly underinclusive under CWA regulations. EPA's independent determination of sulfate impaired waters cannot exclude wild rice waters due to "insufficient information" on acreage or density, as MPCA proposed to do.

EPA must use all data that must be considered under the CWA, whether or not a state has used that data. In *Thomas v. Jackson*, 581 F.3d 658 (8th Cir. 2009), the court upheld EPA's decision to review Iowa's impaired waters list "in accordance with existing federal regulations" rather than in compliance with a statute enacted by the Iowa legislature to limit "credible data" to that within the past five years. *See also Sierra Club, Inc. v. Leavitt*, 488 F.3d at 914 (for EPA to adopt Florida's 7.5-year data cutoff "contradicts the CWA's statutory and regulatory language such that it is not entitled to deference").

CWA regulations for listing impaired waters require that a state (or the EPA when listing waters necessary to implement water quality standards) "assemble and evaluate all existing and readily available water quality-related data and information." 40 C.F.R. § 130.7(b)(5). This data shall, specifically, include information about waters "for which water quality problems have been reported by local, state, or federal agencies; members of the public; or academic institutions." *Id.* at (iii). In fact, "[t]hese organizations and groups should be actively solicited for research they may be conducting or reporting." *Id.*

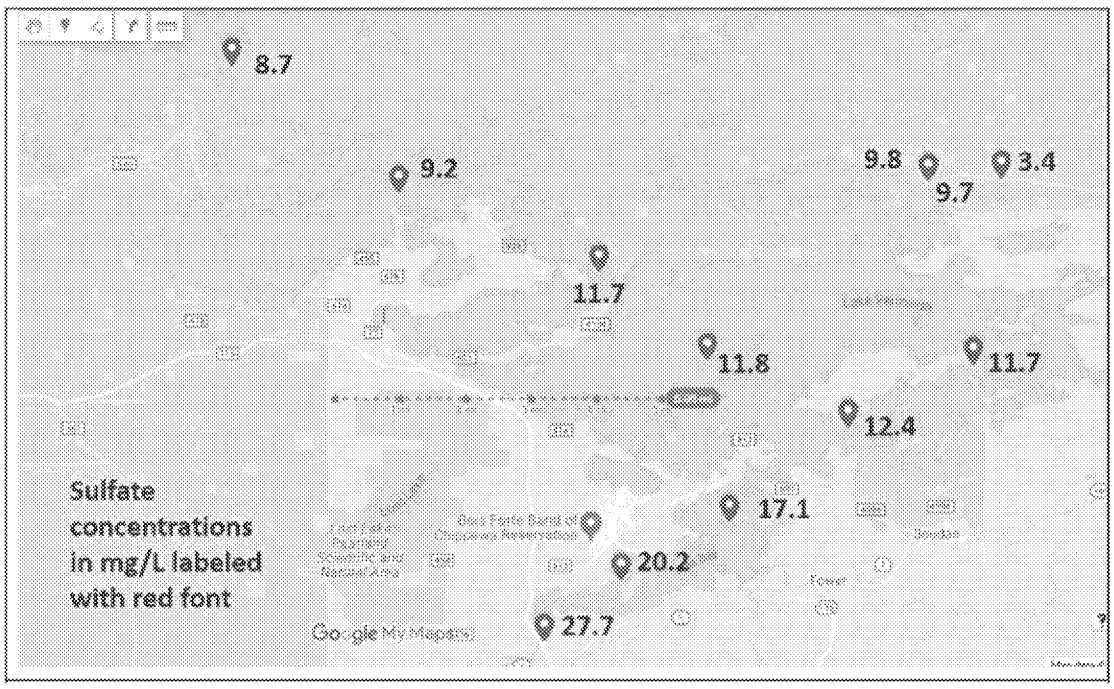
EPA's Decision Document Regarding the Sulfate Impaired Waters EPA is Adding to the Minnesota's 2020 CWA Section 303(d) List ("EPA DD") correctly considered data outside MPCA's cutoff period (2008-2018). *See* EPA DD at 12-13. This consideration is particularly necessary when the readily available water quality data is more recent than MPCA's 2018 cutoff. Finally, under CWA regulations, it is incumbent on an agency listing impaired waters not only to assemble and evaluate, but to solicit research that members of the public, academic institutions, and other local, state, or federal agencies have conducted. These comments rely on timely research and data provided by all of these sources.

3. EPA's initial listing of 30 wild rice WQLS impaired for sulfate is a reasonable and good faith list, for which the undersigned organizations offer additional support.

WaterLegacy and NMW support listing of the 30 wild rice WQLS EPA proposed to add to Minnesota's Section 303(d) list as sulfate impaired waters on April 27, 2021 Additional support is provided for the listing of specified waters below.

Vermillion Lake – Pike Bay (AUID 69-0378-03)

EPA proposed to list Vermillion Lake – Pike Bay as a sulfate impaired wild rice water. The attached 1854 Treaty Authority survey map[1] confirms wild rice in Pike Bay. Additional sulfate data confirms that Pike Bay is a sulfate impaired water. Citizen scientists organized as the Northern Lakes Technical Scientific Advisory Panel ("NLSAP") completed recent additional sulfate sampling in Vermillion Lake. Their June 2021 report,[2] found sulfate concentrations in Pike Bay of 20.2 mg/L and 17.1 mg/L, with an even higher concentration of sulfate, 27.7 mg/L, in the Pike River flowing to Pike Bay. Figure 2 (below) from NLSAP's report confirms that Vermillion Lake – Pike Bay must be listed as a wild rice WQLS due to excessive sulfate.



Embarrass River (AUID 04010201-A99)

EPA proposed to list Embarrass River segments AUID 04010201-579 (upstream of Embarrass Lake), A99 (Embarrass Lake to Esquagama Lake) and B00 (downstream of Esquagama) as sulfate impaired wild rice waters. MPCA's final list of sulfate impaired waters identified -579 and -A99 as wild rice waters. EPA DD, Appx. 1. EPA concluded that segment -A99 has excessive sulfate based on sampling in the upstream (-579) and downstream (B00) Embarrass River segments, as well as segment -A99. Additional support for EPA's listing of -A99 as sulfate impaired is provided

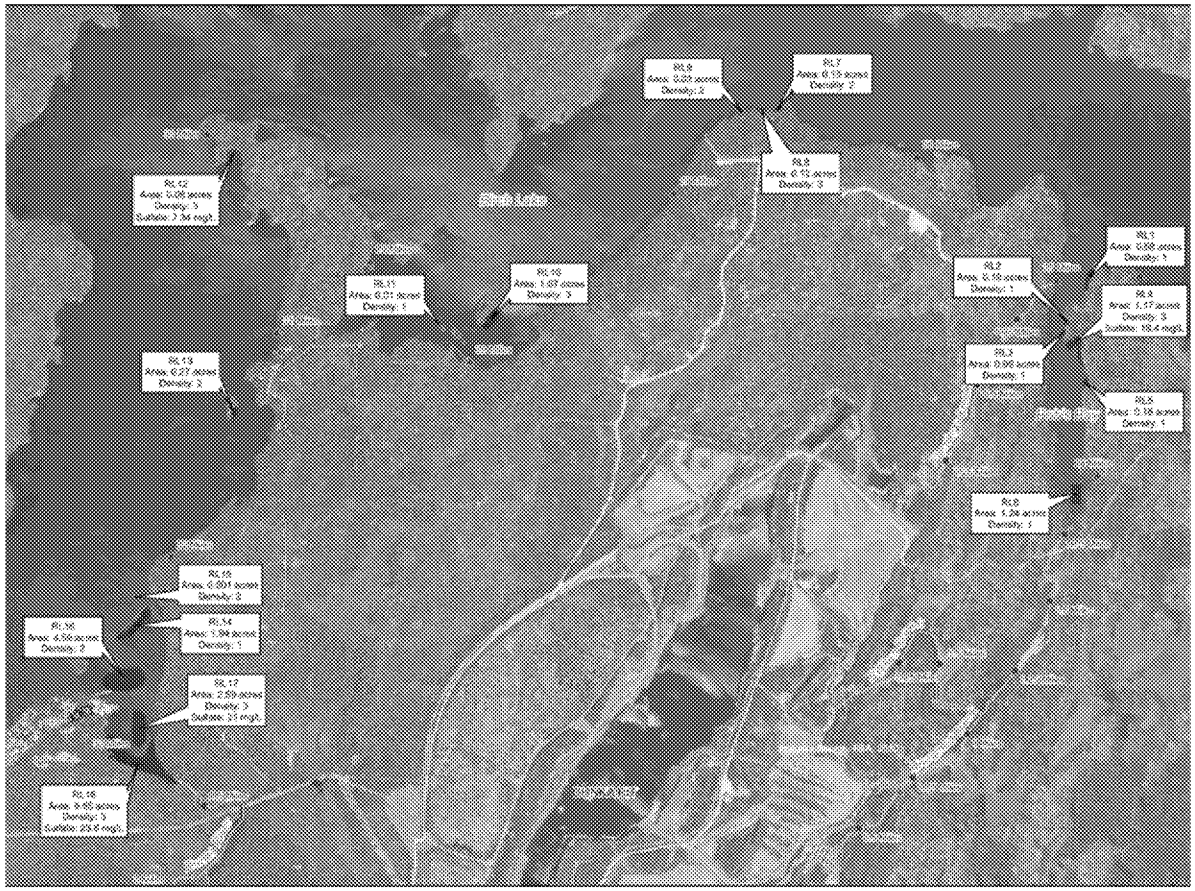
[1] 1854 Treaty Authority, Lake Vermillion Map showing wild rice (blue dots), Exhibit B.
[2] NLSAP, Lake Vermillion Minnesota, Water Quality Technical Report (June 2021), Exhibit C.

by MPCA's Sulfate Data Summary for the immediately upstream Embarrass Lake (69-0496-00),[3] and MPCA data for the proximate downstream Esquagama Lake (65-0002-00).[4] Sulfate in both lakes exceeds 10 mg/L and confirms that -A99 must be listed as a sulfate impaired WQLS.

4. **EPA must list additional wild rice WQLS based on the existing use of waters for wild rice and readily available data that sulfate exceeds Minnesota's 10 mg/L standard.**

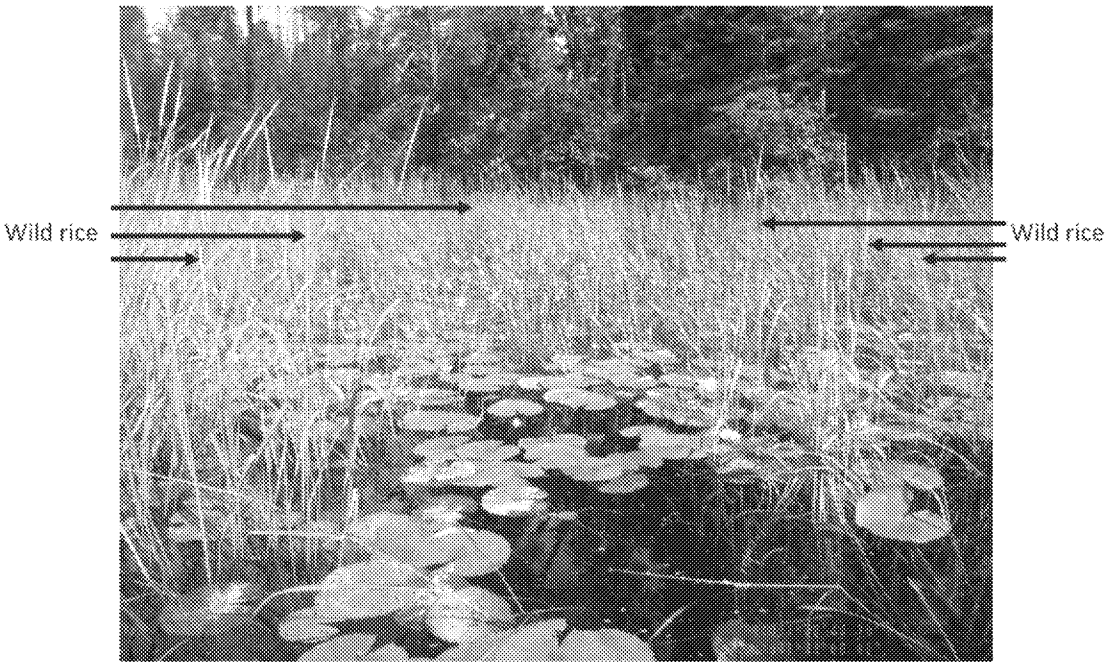
Birch Lake (St. Louis County) (AUID 69-0003-00) (Bob Bay -301, Dunka Bay -303, S009-182, areas north of Dunka Bay -202, -203, and -503)

EPA must list several segments of Birch Lake as wild rice WQLS impaired by sulfate. MPCA proposed to list Birch Lake as a wild rice water[5] and confirmed this designation in a March 15, 2021 letter to EPA. Field surveys conducted for Cliffs Erie in 2011 identified wild rice in Dunka Bay, Bob Bay, and numerous sites between.[6]



[3] MPCA Sulfate Data Summaries All WIDs (Apr. 9, 2021) in Appx. 4 to EPA DD.
[4] MPCA Data is surface water data online at https://webapp.pca.state.mn.us/surface-water/search. Data - Esquagama Lake was provided in Attach. C to WaterLegacy letter to EPA on Apr. 14, 2021
[5] EPA DD, Appx. 1.
[6] Barr, Wild Rice Literature Review and 2011 Field Survey for the Dunka Mining Area, Figure 3, (Dec. 20, 2011), Exhibit D. *See also* Twin Metals. Scoping Environmental Assessment Worksheet, Wild Rice in Birch Lake Figure 8-7 (Dec. 18, 2019), Exhibit E.

The Barr report also included photographs showing wild rice in both Bob Bay and Dunka Bay of Birch Lake.[7]



Birch Lake, Bob's Bay, 8/15/2011, wild rice and lily pads. Emergent vegetation is predominantly wild rice. Photo taken at reference location RL4.

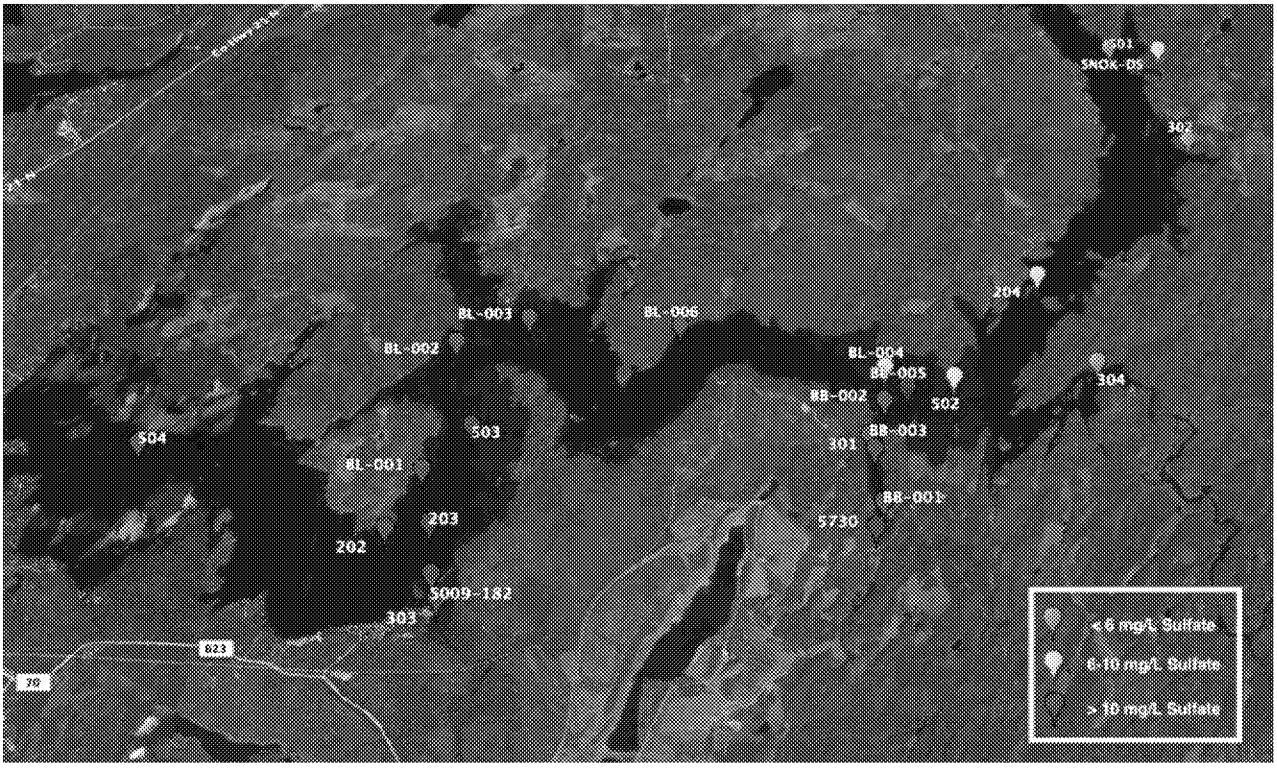
Birch Lake, 8/17/2011, wild rice near Dunka River outlet, facing east. Vegetation in photograph is predominantly wild rice. Photo taken at reference location RL18.

[7] *Id.* at D-1, D-2.

MPCA sulfate data on Birch Lake is sparse and outdated, but MPCA's single sulfate sample from Bob Bay (AUID 69-0003-00-301) in 2019 was 19.9 mg/L.[8] Data from the 1854 Treaty Authority and from NMW's and NLSAP's independent monitoring demonstrates that both Bob Bay and Dunka Bay are impaired waters. NMW field research also shows that a significant segment of Birch Lake has sulfate concentrations in excess of 10 mg/L apparently due to Dunka River sulfate.

Data from the 1854 Treaty Authority show that Dunka Bay (-303)) exceeded 10 mg/L sulfate in both 2013 (13.1 mg/L) and 2021 (21.0 mg/L). Bob Bay (-301) had a 53 mg/L sulfate concentration in 2021, and sulfate from Unnamed Creek flowing to Bob Bay was 194 mg/L.[9]

NMW's Birch Lake water quality sampling protocols and results are detailed in a report, 2020-2021 Sulfate Sampling Effort for Birch Lake (69-0003-00), June 28, 2021, Exhibit G ("NMW Report"). NMW data is summarized in the Exhibit H spreadsheet. The NMW Report includes the results of a total of 104 samples taken in Birch Lake, most during May and June, 2021. NMW Report at 8-20. NMW sampling locations in the segments near Bob Bay and Dunka Bay are shown below. NMW Report at 20.



In Bob Bay (AUID -301 and proximate NMW sites BB-001, -002, -003), NMW reported 17 sulfate samples, 100% of which exceeded 10 mg/L; average sulfate was 29.58 mg/L. Exhibit H. NMW reported 6 sulfate samples in Dunka Bay (AUID -303 and S009-182), 100% of which exceeded 10 mg/L; average sulfate was 15.35. *Id.* North of Dunka Bay itself (AUID -202, -203, -503 and BL-

[8] MPCA Data provided in Apr. 14, 2021, Attach. C, *supra*.
[9] 1854 Authority Birch Lake Data, Exhibit F.

001, -002, -003) sulfate impairment persisted. NMW took 43 sulfate samples, all of which fell between 10.5 and 12.40 mg/L, with an average of 11.44 mg/L. *Id.*

NLSAP sampled Birch Lake in 2021, taking three sulfate samples in Bob Bay, 100% of which exceeded 10 mg/L, with an average of 25.23 mg/L.[10] Three sulfate samples taken by NLSAP in Dunka Bay all exceeded 10 mg/L, with an average of 12.1. *Id.* Adjacent areas of Birch Lake also exceeded 10 mg/L, and the Dunka River where it enters Dunka Bay had sulfate of 19.9 mg/L.

MPCA's single recent Bob Bay sample as well as extensive data from the 1854 Treaty Authority, NMW, and NLSAP support listing Birch Lake as a sulfate impaired WQLS. Although MPCA documents few recent sulfate exceedances in Birch Lake,[11] MPCA data in the Exhibit J folder shows that sulfate upstream in the Dunka River (S002-765), which flows to Dunka Bay, has exceeded 10 mg/L both historically (37.82 mg/L) and recently (24.93 mg/L).

EPA must list Birch Lake – Bob Bay (69-0003-00-301) and Birch Lake – Dunka Bay (69-0003-00-303) as wild rice WQLS impaired due to sulfate. The weight of the evidence further suggests that anthropogenic sulfate from the Dunka River has resulted in sulfate impairments in Birch Lake north of Dunka Bay (69-0003-00-202, -203, -503 and beyond), suggesting broad segments of Birch Lake should also be listed as wild rice sulfate impaired WQLS.

St. Louis River Estuary (St. Louis County) (AUID 0410201-532 and 0410201-533 also identified as **AUID 69-1291-04 and 69-1291-03)**

MPCA online GIS mapping of Minnesota AUIDs, sampling locations and sites where MPCA has identified wild rice[12] confirms wild rice in both AUID 0410201-532 and -533 in the Upper Estuary of the St. Louis River. MPCA identified these Estuary AUIDs as draft wild rice impaired waters in 2013.[13]

Locating data for sulfate levels in the St. Louis River Upper Estuary is complicated by MPCA's changeover from river AUID designations 0410201-532 and -533 to, respectively, lake AUID designations 69-1291-04 and 69-1291-03. MPCA's surface water data site lacks cross-references to locate sampling data, and some sites have few samples. However, sulfate data showing that AUID's -532 (69-1291-04) and -533 (69-1291-03) are impaired for excessive sulfate was provided by MPCA counsel for stations S007-206, -444, -507, -510, -512, -515, and -516.[14] This data shows that for the 69-1291-04 Upper Estuary area, MPCA identified nine sulfate samples, five of which exceeded 10 mg/L, with average sulfate of 12.39 mg/L. For the 69-1291-03 area, MPCA identified one sample in Spirit Lake with a sulfate concentration of 20.8 mg/L. *Id.*

Reviewing MPCA online GIS maps, two other sampling locations are within these Upper Estuary AUIDs. S000-021 is within -532 and S000-277 is within -533. Exhibit K at 2, 4. Data for the St.

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[10] NLSAP, Birch Lake Minnesota, Water Quality Technical Report at 4 (June 2021), Exhibit I.

[11] *See* Data – Birch Lake (Revised) in Exhibit J, Folder of MPCA Surface Water Data

[12] MPCA online ArcGIS mapping with AUIDs, sampling sites, and wild rice sites is found at https://www.arcgis.com/home/webmap/viewer.html?useExisting=1. Screenshots for proposed Upper Estuary wild rice sulfate impaired WQLS are provided in Exhibit K at 2-4

[13] MPCA 2013 Draft Impaired Waters is included in Appx. 4 to EPA DD.

[14] MPCA Email, Sulfate Data in St. Louis River Estuary (May27, 2021), Exhibit L. *See also* Data St. Louis Upper Estuary (MPCA Email) in Exhibit J folder.

Louis River Estuary S000-021 and S000-277 are provided in the Exhibit J folder. For S000-021, historic MPCA data shows an exceedance of the 10 mg/L sulfate standard. There are 43 recent samples, of which 36 or 84% exceed 10 mg/L, with an average of 15.04 mg/L. For S000-277, historic MPCA data also shows an exceedance of the 10 mg/L sulfate standard. There are seven recent samples, 100% of which exceed 10 mg/L, with an average 18.01 mg/L.

Based on all readily available data, both St. Louis River Estuary AUID locations 0410201-532 (69-1291-04) and 0410201-533 (69-1291-03) must be listed as wild rice WQLS due to sulfate impairment.

Additional Lakes and Lake Segments.

Additional lakes and lake segments must be listed as wild rice WQLS impaired due to sulfate. Lake segments proposed for addition to Minnesota's Section 303(d) list as sulfate impaired WQLS are listed below in alphabetical order and summarized in Exhibit A.

Bear Lake (Freeborn County) (AUID 24-0028-00)

Bear Lake is listed as a wild rice water in the Minnesota Department of Natural Resources ("DNR") 2008 report to the Minnesota Legislature.[15] MPCA GIS mapping confirms wild rice. Exhibit K at 5. MPCA Sulfate Data Summaries, Appx. 4 to EPA DD, show 10 sulfate samples, with 90% above 10 mg/L, a mean of 25.27 mg/L, and a lower 95% confidence interval of 17.93 mg/L. Bear Lake must be listed as a wild rice WQLS impaired due to sulfate.

Dark Lake (St. Louis County) (AUID 69-0790-00)

The presence of wild rice in Dark Lake is confirmed in the field research done by the University of Minnesota ("U of M") for MPCA, led by Amy Myrbo, PhD.[16] MPCA data for Dark Lake in the Exhibit J folder includes 12 sulfate samples, 100% of which are above 10 mg/L with average sulfate of 144.6 mg/L. The four samples in U of M data all exceed 10 mg/L and average 174.75 mg/L. Dark Lake must be listed as a wild rice WQLS impaired due to sulfate.

Mississippi Pool 4/Robinson Lake (Wabasha County) (AUID 79-0005-02)

The presence of wild rice is confirmed by U of M field study data, Exhibit N, and by MPCA online GIS mapping, Exhibit K at 6. MPCA data for Miss. R. Robinson Lake has four samples, three of which exceed 10 mg/L, with an average of 23.5 mg/L. Exhibit J folder. The samples taken in U of M field research all exceed 10 mg/L, with an average of 29.57 mg/L. Exhibit N. Although it would be desirable to have additional samples, Mississippi Pool 4/Robinson Lake should be listed as a wild rice WQLS impaired due to sulfate.

Pearl Lake (Stearns County) (AUID 73-0037-00)

Pearl Lake was identified as a wild rice water in MPCA's 2013 Draft Impaired Waters, Appx. 4, EPA DD, and through DNR interagency data collaboration in the wild rice sulfate rulemaking process, as reflected in MPCA's Wild Rice Waters database.[17] MPCA Sulfate Data Summaries (Appx. 4, EPA DD) identify 45 sulfate samples, 100% of which exceed 10 mg/L, with mean sulfate

[15] DNR, Natural Wild Rice in Minnesota, Report to Minn. Legislature (Feb. 15, 2008), Exhibit M at 67.
[16] Univ. of Minn., Field Survey Data (Feb. 6, 2015), excerpted for sulfate data and highlighted, Exhibit N.
[17] MPCA Wild Rice Waters database (July 19, 2016) provided to Wild Rice Sulfate Standard Advisory Committee on Jan. 25, 2017 is included as Attach. A in Appx. 4 to EPA DD, see row 2193 for Pearl Lake.

of 24.88 mg/L and a lower 95% confidence interval of 22.79 mg/L. Pearl Lake must be listed as a wild rice WQLS impaired due to sulfate.

Rice Lake (Stearns County) (AUID 73-0196-00)

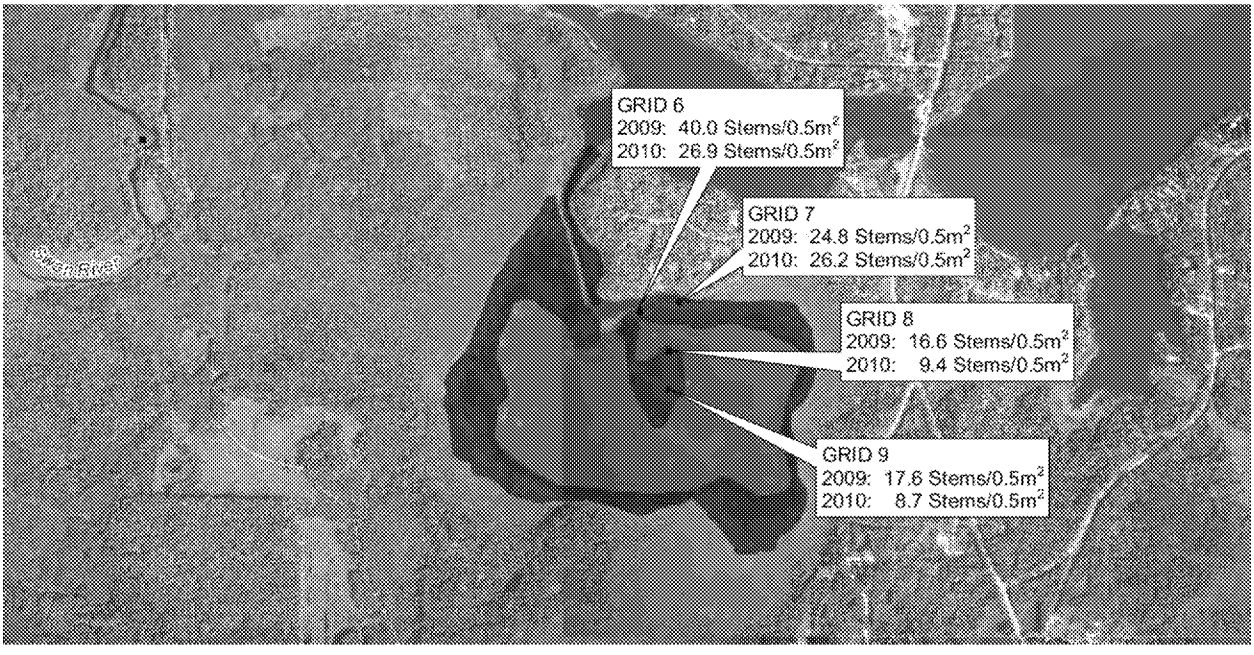
Rice Lake was identified as a wild rice water in DNR's 2008 legislative study, Exhibit M at 82. Wild rice is confirmed by MPCA online GIS mapping, Exhibit K at 7. MPCA Sulfate Data Summaries (Appx. 4, EPA DD) identify 13 sulfate samples, 11 of which or 84.6% exceed 10 mg/L, with a mean of 29.13 mg/L and a lower 95% confidence interval of 23.01 mg/L. Rice Lake must be listed as a wild rice WQLS impaired due to sulfate.

Sturgeon Lake (Goodhue County) (AUID 25-0017-01)

Sturgeon Lake was identified as a wild rice water in MPCA's final list of approximately 1,300 wild rice waters, Appx. 1, EPA DD. MPCA Sulfate Data Summaries (Appx. 4, EPA DD) identify 58 sulfate samples, 100% of which exceed 10 mg/L, with a mean of 52.55 mg/L and a lower 95% confidence interval of 48.06 mg/L. Sturgeon Lake must be listed as a wild rice WQLS impaired due to sulfate.

Swan Lake (Itasca County) (West Bay AUID 31-0067-01 and Main Basin 31-0067-00, -02)

The EPA listed the Southwest Bay of Swan Lake (AUID 31-0067-03) as a proposed wild rice sulfate impaired WQLS. Current MPCA GIS mapping identifies the Swan Lake West Bay (not just the southern part of the West Bay) as AUID 31-0067-01. *See* Exhibit K at 8. The Keetac expansion environmental impact statement ("EIS") also both the southern and northern areas as the Swan Lake West Bay.[18] The 2011 Barr Engineering Report for U.S. Steel Keetac shows wild rice in the West Bay in the southern area extending to the neck of northern part of the bay.[19]



[18] DNR, Keetac Mine Expansion Project, Final EIS, Vol. II, (Nov. 2010) Figure 4.9.7.1 Exhibit O. This "Keetac Final EIS" is at https://www.dnr.state.mn.us/input/environmentalreview/keetac/index.html.

[19] Barr Engineering, 2010 Water Quality, Hydrology, and Wild Rice Monitoring Year End Report for U.S. Steel Corp. Keetac Expansion Project, Figure 11 (Jan. 2011), Exhibit P.

MPCA data for "Swan West Bay" AUID 31-0067-01 is more recent and robust than data for -03, "Swan Southwest Bay." *See* Data Swan - Lake in Exhibit J folder. For -01, MPCA data shows 27 sulfate samples, of which 21 or 78% exceed 10 mg/L, with average sulfate of 22.34 mg/L. Swan Lake West Bay (AUID 31-0067-01) must be listed as a wild rice WQLS impaired due to sulfate.

DNR's 2008 wild rice report identified the main basin of Swan Lake (AUID 31-0067-00) as a wild rice water with 50 acres of wild rice. Exhibit M at 72. As the MPCA online surface water data and GIS maps show, the Swan Lake Main Basin has previously been identified both as 31-0067-00 and -02, and there is wild rice in the Main Basin. Exhibit K at 8.

MPCA's online surface water Data- Swan Lake, in the Exhibit J folder, contains no data for -00, but comprehensive and recent data for -02, suggesting that this is the AUID now used for the Swan Lake Main Basin. MPCA data for -02 shows 81 sulfate samples, of which 100% exceed 10 mg/L, with and average sulfate level of 27 mg/L. Swan Lake Main Basin (AUID 31-0067-00, -02) must be listed as a wild rice WQLS impaired due to sulfate.

Additional River and Stream Segments

Rivers and streams proposed for addition as wild rice WQLS impaired due to sulfate are listed below in alphabetical order and summarized with applicable data in Exhibit A.

Bostick Creek (Lake of the Woods County) (AUID 09030009-537)

Bostick Creek was identified as a wild rice water in DNR's 2008 legislative study, Exhibit M at 75. Wild rice is confirmed by MPCA online GIS mapping, Exhibit K at 9, and MPCA proposed Bostick Creek in its 2013 Draft Impaired Waters List, Appx. 4 to EPA's DD. MPCA Sulfate Data Summaries (Appx. 4, EPA DD) identify 10 sulfate samples, 100% of which exceed 10 mg/L, with a mean of 32.77 mg/L and a lower 95% confidence interval of 30.29 mg/L. Bostick Creek must be listed as a wild rice WQLS impaired due to sulfate.

Cannon River (Goodhue County) (AUID 07040002-501 or -551)

Cannon River was identified as a wild rice water in DNR's 2008 legislative study, Exhibit M at 67, and several segments of the Cannon River were listed in MPCA's 2013 Draft Impaired Waters list, with the explanation that the DNR's listing did not identify where on the river wild rice was present, although "[w]herever sampled, the Cannon River has high sulfate concentrations." MPCA 2013 Draft Impaired Waters at 1, Appx. 4, EPA DD. For these comments, each of the segments identified by MPCA were evaluated.

One of the Cannon River segments identified by MPCA as a draft impaired water in 2013 is -501. As shown in MPCA online GIS mapping, Exhibit K at 10, segment 501 does not appear to contain wild rice, but its immediate downstream river segment -551 is a confirmed wild rice location. There is no sulfate sampling available in -551, but MPCA's Sulfate Data Summaries (Appx. 4, EPA DD) for the proximate upstream -501 Cannon River segment identify 10 sulfate samples, 100% of which exceed 10 mg/L, with a mean of 24.56 mg/L and a lower 95% confidence interval of 22.01 mg/L. The Cannon River must be listed as a wild rice WQLS impaired due to sulfate. Listing of either segment -501 or segment -551 would allow calculation of a total maximum daily load for sulfate to protect wild rice in segment -551, just before the Cannon River junction with the Mississippi River.

Chippewa River (Chippewa County) (AUID 07020005-501)
Several segments of the Chippewa River, including segment -501, were listed in MPCA's 2013 Draft Impaired Waters list with the explanation that DNR's study point is not clear where on the Chippewa River wild rice is present and that "[w]herever sampled the Chippewa River has high sulfate concentrations." MPCA 2013 Draft Impaired Waters at 1, Appx. 4, EPA DD. For these comments, each of the segments identified by MPCA in 2013 were evaluated. The presence of wild rice was confirmed in segment -501, as shown in Exhibit K at 11.

MPCA data for Chippewa River segment -501, Exhibit J folder, shows historic elevated sulfate. MPCA data also includes nine recent sulfate samples 100% of which exceed 10 mg/L, with an average sulfate concentration of 139.4 mg/L. The Chippewa River segment -501, just before the Minnesota River junction, must be listed as a wild rice WQLS impaired due to sulfate

Hay Creek (Itasca County) (AUID 07010103-545)
Tribes have identified Hay Creek as a wild rice water. The presence of wild rice in Hay Creek is clearly demonstrated in Figure 4.7.4 of the Keetac Final EIS.[20] Wild rice is also confirmed in Hay Creek by MPCA online GIS mapping, Exhibit K at 12. MPCA Sulfate Data Summaries (Appx. 4, EPA DD) identify 11 sulfate samples, 100% of which exceed 10 mg/L, with a mean of 24.99 mg/L and a lower 95% confidence interval of 22.02 mg/L. Hay Creek must be listed as a wild rice WQLS impaired due to sulfate.

Mississippi River Root R. to Iowa, including Pool 8 (Houston County) (AUID 07060001-509) (Stations S007-222, S007-556)
University of Minnesota field research, Exhibit N, demonstrates that AUID 07060001-509, described as Mississippi River Pool 8, is a wild rice water at Genoa and Reno (S007-222, S007-556). The presence of wild rice is also confirmed by MPCA online GIS mapping at several locations just south of the Root River confluence with the Mississippi River segment, as well as further south near Genoa and Reno. Exhibit K at 13. MPCA data for segment -509 in the Exhibit J folder has nine sulfate samples, six or 66% of which are above 10 mg/L, with average sulfate of 18.44 mg/L, excluding no outliers. The five samples in U of M data, Exhibit N, all exceed 10 mg/L, with average sulfate of 28.58 mg/L. Mississippi River segment 07060001-509 must be listed as a wild rice WQLS impaired due to sulfate

Raven Stream West Branch (Scott County) (AUID 07020012-842) (Station S004-617)
Raven Stream West Branch was initially listed as a wild rice water in MPCA's 2016 Wild Rice Waters database. Attach. A in Appx. 4 to EPA DD, row 2043. The presence of wild rice is confirmed by MPCA online GIS mapping, Exhibit K at 14. MPCA data for Raven Stream West Branch in the Exhibit J folder provides 26 sulfate samples, 100% of which are above 10 mg/L, with average sulfate of 26.73 mg/L. Raven Stream West Branch must be listed as a wild rice WQLS impaired due to sulfate.

Rice Creek (Sherburne) (AUID 07010203-512) (Station S001-523)
MPCA proposed Rice Creek from Rice Lake to Elk River in its 2013 Draft Impaired Waters List (Appx. 4 to EPA's DD). Wild rice is confirmed by MPCA online GIS mapping, Exhibit K at 15.

[20] Keetac Final EIS, *supra*, Figure 4.7.4, Exhibit Q.

MPCA data for Rice Creek in the Exhibit J folder provides 15 sulfate samples, 100% of which are above 10 mg/L, with average sulfate of 22.61 mg/L. Rice Creek must be listed as a wild rice WQLS impaired due to sulfate.

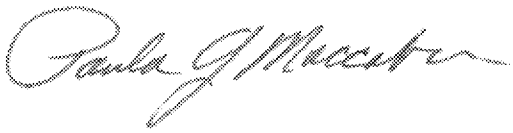
Conclusion

WaterLegacy and NMW strongly support the EPA's initial listing of 30 wild rice WQLS impaired due to sulfate and request that EPA list the additional 20 WQLS identified in these comments and listed in summary form in Exhibit A. WaterLegacy and NMW believe that the EPA's oversight of Minnesota's failure to list a single wild rice water impaired due to excessive sulfate is not only reasonable but necessary to fulfill EPA's obligations under the CWA and its implementing regulations.

WaterLegacy and NMW would underscore that the EPA's duty to list impaired waters upon partial disapproval of a state's Section 303(d) list is an independent obligation based on what EPA determines is necessary under the CWA considering all readily available data. On this basis, NMW has conducted rigorous testing and has provided a detailed report on sulfate concentrations in Birch Lake, one of the most sensitive bodies of water affected by existing taconite mining and threatened by potential copper-nickel mining. In these comments, as well as in comments, attachments, and exhibits submitted to EPA in October 2020, March 2021, and April 2021, WaterLegacy has sought to provide not just legal argument, but detailed information from government agencies, academic sources, regulated parties, and members of the public to support the EPA's obligation to list sulfate impaired waters in compliance with the CWA.

Please feel free to contact Matt Norton (matt@savetheboundarywaters.org) if you have any questions about Birch Lake or the NMW Report and to contact Paula Maccabee (paula@waterlegacy.org or pmaccabee@justchangelaw.com) if you have questions about other data or materials. We welcome communications and look forward to the EPA's additional listings of Minnesota wild rice WQLS impaired due to excessive sulfate.

Respectfully submitted,



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June 30, 2021

Mr. Paul Proto
Proto.paul@epa.gov
United State Environmental Protection Agency
Region 5
77 West Jackson Boulevard
Chicago, IL 60604

RE: Public Comment on EPA's Additions to Minnesota's 2020 Impaired Waters List

Mr. Paul Proto,

I appreciate the opportunity to comment on EPA's additions to Minnesota's 2020 Impaired Waters List on behalf of Cleveland-Cliffs Inc. (Cliffs). Cliffs produces domestic flat-rolled steel and is the largest iron ore pellet producer in North America. Cliffs iron mining facilities in Minnesota represent the foundation of the United States' ability to produce domestic steel and are a significant employer in northern Minnesota. Our facilities have water discharge permits and some of them discharge to waters subject to this proposed addition to Minnesota's impaired waters listing.

Minnesota's sulfate wild rice standard is a source of frustration for all sides. We have been advocating for Minnesota to modify the wild rice standard for technical and legal reasons to ensure the livelihoods of our employees are protected and the right level of investment is made to protect this natural and cultural resources. We were not in complete technical endorsement of Minnesota's 2017 into 2018 proposed wild rice standard rule, but it certainly was an improvement from the poorly justified current standard that was not developed in a technically rigorous method.

Cliffs was surprised to first read EPA's proposed additions to Minnesota's Impaired Waters List because it relied on MPCA's proposed list of waters to receive the wild rice beneficial use designation through rulemaking, which MPCA was and remains required to do by state law. What was most striking, was that EPA was using a list of proposed waters for a wild rice

beneficial use designation that had an accompanying equation based criteria, BOTH the use and the criteria are inseparable components of a water quality standard. EPA is proposing to separate the designated use from the equation based criteria to then make an impairment determination against the existing criteria.

Cliffs' primary comment is that EPA does not have the authority to proceed in this manner with the proposed listing of the additional wild rice waters to Minnesota's impaired waters list. The rationale for this is outlined further in this letter. Cliffs thinks the appropriate way for the sulfate wild rice standard to be resolved remains for the MPCA to engage in another rulemaking to finalize BOTH a list of designated waters and an equation based criteria, which are inseparable components of a water quality standard.

However, if EPA does find that it has the authority to complete this modification to Minnesota's 303d listing, then we have specific comments on certain waters we ask EPA to take into consideration.

Request to Remove Embarrass River Segment AUID 04010201-B00

We contacted Minnesota Pollution Control Authority (MPCA) to gain some insight into the various AUIDs, or WIDs, for the Embarrass River and the agency's position regarding which had been considered for being designated for the wild rice use through rulemaking and learned from MPCA that their views were previously detailed in MPCA's December 1, 2017 Wild Rice Rulemaking Rebuttal Response (wq-rule4-15jj). In the rebuttal response, MPCA says:

"In addition, MPCA is proposing to split the Embarrass River WID 04010201-577 into two separate WIDs – one from Embarrass Lake through Esquagama Lake and the other from Esquagama Lake to the St. Louis River. Both stretches will receive new WID numbers to identify them. The MPCA proposes to list the WID from Embarrass Lake through Esquagama Lake as a Class 4D wild rice water. The MPCA does not have sufficient information to list the segment from Esquagama Lake to the St. Louis River as a Class 4D wild rice water and will therefore track it as an insufficient information water."

After the AUIDs (WIDs) were split, a new segment labelled AUID 04010201-B00 was created from Esquagama Lake to the St. Louis River, and as MPCA says above, this new segment was not proposed to receive the wild rice use designation because it had been surveyed and no wild rice was found and the habitat was deemed unsuitable. Although we disagree with EPA relying on the MPCA's proposed wild rice waters for reasons outlined below, if EPA does move forward we think it must be consistent and remove this segment from the list of additional impaired waters.

Request to Remove Second Creek AUID 04010201-952

The MPCA proposed that a different water quality standard was needed for some wild rice waters in 2017. This was detailed in Chapter 2 of the MPCA's Technical Support Document: Refinements to Sulfate Wild Rice Water Quality Standard to Protect Wild Rice (wq-rule4-15n)

beginning on page 67. Second Creek AUID 04010201-952 was specifically detailed in this chapter, and on page 69 MPCA writes,

"For instance, Second Creek..., was sampled five times and porewater sulfide was less than 120 µg/L in each case despite relatively high sulfate concentrations (303 to 838 mg/L; sulfate was not measured for one of the samplings). Only two of the samples were false positives, because calculated protective concentrations are also relatively high (148 to 947 mg/L) as a result of low sediment TOC and high extractable iron (Table 2-1). Because of interest in this site that combined high sulfate, low sulfide, and robust wild rice density, in 2015 researchers from the University of Minnesota conducted an investigation that measured and modeled groundwater and geochemistry at the site (Yourd, 2017). Yourd found that the model of the geochemical relationships corroborated the findings of Pollman et al. (in press) that sulfide accumulation in porewater depends on the levels of iron and organic carbon—but that hydrologic flux can also play a significant role in the geochemistry of porewater. Yourd concluded that porewater sulfide concentrations in an iron-rich environment like Second Creek may only become elevated when high concentrations of sulfate are able to move into the sediment."

In other words, the researchers found in Second Creek that iron rich groundwater is upwelling into the sediment and is thought to be controlling the formation of the suspected harmful parameter, sulfide. More importantly, during the 2017 and 2018 wild rice rulemaking it is clear that MPCA did not intend for Second Creek to have a 10 mg/L standard applied to it, the threshold that EPA is using to determine impairment. As we have mentioned a few times now, while Cliffs does not agree with EPA relying on the proposed wild rice water list, if EPA does so and moves forward with the listing of additional waters as impaired for sulfate, Cliffs thinks EPA must avoid arbitrarily choosing which information to consider from the previous rulemaking and respectfully requests that Second Creek is removed from the additional listing of impaired waters.

The State of Minnesota Has Not Designated Any Waters As Subject to the Numeric Sulfate Standard; Until that Changes, EPA Has No Authority Under Section 303(d) to Unilaterally Designate the Waters to Which the Standard Applies

In its May 29, 2018, Decision Document ("2018 Decision Document") approving Minnesota's 2014 303(d) list, EPA appropriately respected Minnesota's decision to not list any waters as impaired for the state's class 4A 10 mg/L sulfate standard ("Sulfate Standard"). In EPA's April 27, 2021, Decision Document on Sulfate Impaired Waters ("2021 Sulfate Decision Document"), the agency has made an about-face in its interpretation of Minnesota's Sulfate Standard and has exceeded the statutory authority granted under section 303(d) of the Clean Water Act (CWA). As explained more fully below, section 303(d) authorizes EPA to override state listing decisions when a state has failed to properly identify waters that are not meeting water quality standards "applicable to" those waters. However, section 303(d) does not authorize EPA to override state decisions regarding which water quality standards are "applicable to" which waters. Yet that is exactly what EPA proposes to do: determine which Minnesota water are

"wild rice waters" subject to the standard and then, once the designation process is complete, determine which of these waters are impaired for the standard. Cliffs respectfully suggests that EPA is well outside its statutory lane and urges the agency to take the approach it did in the 2018 Decision Document and not list any waters as impaired for the Sulfate Standard.

EPA's Decision to Designate Waters Subject to the Sulfate Standard Is Inconsistent With Congress's Careful Balancing of Federal and State Power in the CWA

Congress, in passing the Clean water Act (CWA), prioritized a policy of placing primary authority for establishing water quality standards with the states:

It is the policy of the Congress to recognize, preserve, and protect the primary responsibilities and rights of States to prevent, reduce, and eliminate pollution, to plan the development and use (including restoration, preservation, and enhancement) of land and water resources, and to consult with the Administrator in the exercise of his authority under this chapter.

33 U.S.C. s 1251(b). Congress's concern was that the CWA "not place in the hands of a federal administrator absolute power over zoning watershed areas," because "[t]he varied topographies and climates in the country call for varied water quality solutions." *Mississippi Comm'n on Nat. Res. v. Costle*, 625 F.2d 1269, 1275 (5th Cir. 1980). And while the CWA vests in EPA significant authority to oversee the states' establishment and revision of water quality standards, EPA's authority is stronger in some situations than in others.

For two primary reasons, EPA's authority under the CWA is substantially limited when it comes to determining which Minnesota waters are subject to the Class 4A 10 mg/L sulfate standard ("Sulfate Standard"). First, the wild rice irrigation use (WRIU)[1] protected by the Sulfate Standard is not among the CWA section 101(a)(2) "fishable/swimmable" uses that states *must* protect in their waters. 33 U.S.C. § 1251(a)(2). To the contrary, the decision whether to establish a non-fishable/swimmable beneficial use such as the WRIU—and the related decisions of what the scope of the use should be and the waters to which it should be designated—is up to Minnesota, not EPA.[2]

[1] Minn. R. 7050.0224, subp. 2 generally provides that the quality of class 4A waters of the state must be such as to "permit their use for irrigation without significant damage or adverse effects upon any crops or vegetation"; the Sulfate Standard in subpart 2 applies only to waters "used for production of wild rice during periods when the rice may be susceptible to damage by high sulfate levels." Minnesota has yet to designate the waters that are subject to this use/standard.

[2] *See, e.g.*, EPA Water Quality Standards Handbook § 2.1 (explaining that under sections 101(a)(2), and 303(c) of the CWA, while states "*must* provide water quality for the protection and propagation of fish, shellfish, and wildlife, and provide for recreation in and on the water ('fishable/swimmable') where attainable," states otherwise are only required to "*consider* the use and value of State waters for public water supplies, propagation of fish and wildlife, recreation, agriculture and industrial purposes, and navigation" and are "free to add use classifications" (emphases added)).

Second, EPA's authority in this situation is further limited because EPA is attempting to *designate* waters subject to the Sulfate Standard rather than change the 10 mg/L *criteria* for the Standard. As the Fifth Circuit explained in its *Costle* decision, EPA's role "is more dominant when water quality criteria are in question"; criteria are "more amenable to uniformity," which Congress recognized by authorizing EPA to publish nationwide water quality criteria. *Id* citing 33 U.S.C. § 1314(a)(1). But, the Fifth Circuit continued, "[a]lthough the designation of uses and the setting of criteria are interrelating chores, *the specification of a waterway as one for fishing, swimming, or public water supply is closely tied to the zoning power Congress wanted left with the states*." 625 F.2d at 1275 (emphasis added). Thus, the decision regarding which waters are subject to the Sulfate Standard, i.e., the designation of the WRIU to specific waters, is fundamentally a zoning decision entrusted to Minnesota alone, particularly since the WRIU at issue is not one of the fishable/swimmable uses mandated by the CWA. By attempting to designate waters as being subject to the Sulfate Standard, EPA is contravening the CWA's balancing of federal and state power. For that reason, EPA should not proceed with its proposed listings.

<u>The Plain Language of Section 303(d) Does Not Authorize EPA to Designate the Waters to Which the Sulfate Standard Is Applicable</u>

Under section 303(d)(1)(A) and (C), states must identify waters for which effluent limitations are "stringent enough to implement any water quality standards applicable to such waters" and establish TMDLs for these impaired waters. The phrase "applicable to such waters" makes clear that the process required by this statute to identify impaired waters is only relevant when and if a prior decision has been made that the standard in question is "applicable." This only makes sense: a water body cannot be determined to be impaired for a water quality standard under section 303(d) if the water body is not subject to the standard in the first place. Under section 303(d), if EPA does not approve a state's list of impaired waters, EPA is authorized itself to undertake the state's job of identifying waters where effluent limitations are insufficient to meet applicable water quality standards and establish TMDLs. However, the "identification" part of this EPA process is simply to identify waters that do not meet "applicable" standards, not to decide which standards apply in the first place. This is the fundamental problem with EPA's approach to Minnesota's Sulfate Standard in the 2021 Decision Document: EPA is not only attempting to identify waters that fall short of standards Minnesota has made applicable to the waters—a step for which it does have authority under section 303(d)—rather, EPA is also undertaking the underlying, precedent task of choosing the Minnesota waters in which the Sulfate Standard will be "applicable." This is beyond EPA's statutory authority.

Even if EPA were to attempt this type of designation process under CWA Section 303(c)—which, unlike section 303(d), *does* allow EPA to override states' new or revised water quality standards—EPA would still be skating on thin legal-authority ice. Section 303(c)(4)(B) allows EPA to step in and issue a new or revised water quality standard for a state where EPA

determines that "a revised or new standard is necessary to meet the requirements of this chapter." There are significant questions, beyond the scope of this comment letter, regarding whether meeting "the requirements of this chapter" would justify EPA overriding Minnesota's process of determining which state waters will be protected for a non–Section 101(a)(2) use such as the WRIU. But in the current proceeding under section 303(d), there is no ambiguity regarding whether EPA has legal authority to override Minnesota's state designation process under Section 303(c), as EPA is attempting to do with in the 2021 Sulfate Document Decision: EPA has no such authority.

EPA, Like Many Stakeholders, May Be Disappointed With the Pace of Minnesota's Process to Determine Which State Waters Should Be Required to Meet the Sulfate Standard, But That Disappointment Does Not Justify EPA Interfering With Minnesota's Proper Exercise of Its Zoning Authority

It is no secret that Minnesota has struggled to decide which state waters are subject to the state's unique Sulfate Standard after MPCA began applying the standard two decades ago. It is a complicated factual, environmental, historical and cultural issue, with significant ramifications for stakeholders on all sides, including Cliffs and other mining companies on the Iron Range. For this reason, it is unsurprising that the process of designating waters subject to the standard has been slow. MPCA's early attempts to enforce the Sulfate Standard in state discharge permits—attempts that would have effectively designated waters subject to the standard on a case-by-case basis—were halted by the Minnesota Legislature. *See Minn. Chamber of Commerce v. Minn. Pollution Control Agency*, No. A12-0950, 2012 Minn. App. Unpub. LEXIS 1199 (Dec. 17, 2012) (declining to review any proposed interpretation or application of the Sulfate Standard because the issue had been mooted by the 2011 legislation, which "directs the agency to...specify the bodies of water to which the rule applies and the specific time period during which it applies," referencing 2011 Minn. Laws 1st Spec. Sess. ch. 2, art. 4, § 32, at 71-73). The Legislature's actions in directing MPCA to undertake rulemaking to designate waters subject to the Sulfate Standards, as well as indicating the factors MPCA should consider in adopting completing the rulemaking, are proper exercises of the State's zoning power, described above.[3]

As directed by the Legislature, MPCA did undertake rulemaking, issuing a proposed rule in August 2017 that included a *proposed* list of waters that would be protected for the wild rice irrigation use and revised Sulfate Standard. The administrative law judge (ALJ) presiding over the rulemaking proceedings issued a report recommending to MPCA that the agency change

[3] The fact that the Legislature in its 2015 legislation prohibited MPCA from listing any waters under section 303(d) as impaired for the Sulfate Standard was not out of line: until Minnesota has decided which waters were subject to the Sulfate Standard, i.e., the waters to which the Standard is "applicable," MPCA should have no reason for listing any waters as impaired. 2015 Minn. 1st Spec. Sess. Ch. 4, Art. 4, Sec. 136. *See also Minn. Chamber of Commerce v. Minn. Pollution Control Agency* *18–*19 (noting that at that time MPCA "has not yet attempted to enforce the rule as currently written").

the proposed rule before finalizing it; however, rather than amend the rule to address the defects cited by the ALJ, MPCA withdrew the proposed rule.[4] Since that time, Minnesota's governor's office has established a wild rice task force to address wild rice issues including the issue of which waters should subject to the wild rice standards in part 7050.0224.[5] In this way, Minnesota is deliberately making its way toward finalizing the difficult question of which waters, in the state's exercise of its zoning authority, will be protected for the WRIU and designated as subject to the Sulfate Standard. EPA may be disappointed by the speed of Minnesota's progress, but the process is moving nonetheless and it is the state's complex issue to resolve.

Until this year, EPA has appropriately respected the separation of federal and state roles in implementing the CWA. For example, in its 2014 Decision Document, EPA rejected commenters' suggestions that myriad waters were subject to (and potentially impaired for) the Sulfate Standard. 2014 Decision Document § 3.2.2. EPA also overlooked what it described as inconsistent statements by MPCA staff members regarding the applicability of the Sulfate Standard. *Id.* (noting lack of clarity regarding whether MPCA considered any waters beyond the 24 waters listed in Minn. R. 7050.0470, subp. 1 as subject to the Standard). "Other than the list of waters in Minn. R. 7050.0470, subpart 1," EPA wrote, "none of the lists of waters about which EPA has been made aware have been developed under both the State's WQS process and with MPCA authorization or approval." 2014 Decision Document § 3.2.2. Therefore, EPA continued, "although MPCA may designate waters used for the production of wild rice beyond those listed in Minn. R. 7050.0470, subpart 1, EPA *does not believe MPCA has done so at this time*" (emphasis added). *Id.* As a result, in the 303(d) process, EPA only considered the impairment status of the 24 "[WR]" waters listed in Minn. R. 7050.0470, because these waters had been designated through notice and comment rulemaking "under the State's WQS process."

Three years later, EPA has reversed course by "revising our previous interpretation of Minn. R. 7050.0224 to be consistent with MPCA's statement that its 2017 list of 1300 waters is the minimum list of waters to which the wild rice beneficial use applies." 2021 Sulfate Decision Document 9. What exactly has changed to warrant EPA's about-face? In 2021, as in 2018, EPA reviewed essentially the same long lists of waters different groups wanted designated as subject to the Sulfate Standard. In 2021, as in 2018, none of these waters has been designated as subject to the Sulfate Standard by the rulemaking process mandated by the Minnesota

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[4] It is important for EPA to understand that the ALJ in state administrative rulemaking proceedings plays a much more limited role than, for example, the EPA Environmental Appeals Board. The rulemaking ALJ's decision is not binding on anyone; it is simply a recommendation to the state agency proposing the rule, which the agency is free to—and often does—ignore. ALJ rulemaking decisions have no precedential effect, and they cannot be appealed to state or federal court. *See generally*, Minn. R. 1400.2200 to 1400.2240 and Minn. Stat. § 14.15.

[5] *See* Gov. Mark Dayton, EO 18-08 (May 30, 2018).

Legislature. And in 2021, as in 2018, EPA was presented with inconsistent statements by MPCA representatives.

What changed, apparently, is nothing more than EPA's receipt of a letter from MPCA indicating MPCA's opinion that eight waters which commenters said should be listed as impaired for the Sulfate Standard "should be considered as 'waters used for production of wild rice' for the purpose of evaluating impairment status."[6] MPCA made this statement because these waters were on the proposed list of wild waters in MPCA's retracted rulemaking. *Id.* Based on this letter, EPA has undertaken an ad hoc, unauthorized water quality standard–designation process, opening the floodgates to new information and evaluating "extensive additional data and information received through consultation with Tribal Governments" to determine which waters to designate as subject to the Sulfate Standard.[7] This is not a sufficient basis for EPA to change its prior interpretation.

More importantly, however, MPCA's new interpretation of the CWA represents a monumental overstep of EPA's authority under the Act and an unparalleled interference with Minnesota's right to exercise zoning power. First, not only is EPA taking over Minnesota's authority to designate which waters will be protected for the WRIU, EPA is treating the proposed list from the retracted rulemaking as if it had been duly adopted as a final rule, which it has not. The list was *proposed* by MPCA, and the ALJ, in her *nonbinding recommendation* to MPCA, said she thought the list was underinclusive, but neither of those actions constitutes an actual designation, and certainly not one undertaken through rulemaking, as required by the Minnesota legislature. To the contrary, the fact those waters were proposed for designation and, after an extensive process, finally were *not* designated makes abundantly clear they should not be deemed designated.

In addition, EPA, also on the basis of aspects of the failed rulemaking, has unilaterally decided a key element of the Sulfate Standards—that the standard only applies "during periods when the rice may be susceptible to damage by high sulfate levels," Minn. R. 7050.0224, subp. 2—is of no consequence. EPA's two-sentence rationale for making this significant change to Minnesota water law is that in MPCA's proposed and abandoned rulemaking, MPCA "found that wild rice is vulnerable to elevated sulfate concentrations year-round, and the existing standards does not specify or define a time when wild rice is susceptible to damage by high sulfate levels."[8] EPA's attempt to pick and choose findings from an abandoned rulemaking process is both arbitrary and unfair to those parties who advocated for different positions in the rulemaking process

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[6] *See* MPCA letter to Tera Fong, EPA, with further information on MPCA's 303(d) list (March. 15, 2021). MPCA emphasized that its analysis "is not a complete assessment, and does not represent a final decision on an appropriate assessment methodology." Also note that MPCA's letter does not address the application of the second component of the Sulfate Standard, i.e., identifying the "periods when the rice may be susceptible to damage by high sulfate levels."

[7] 2021 Sulfate Decision Document 1.

[8] *Id.* at 13.

(positions that might had prevailed had the rule been finalized), but which EPA has chosen not to embrace.

For these reasons, Cliffs respectfully requests EPA to abandon its plan to list waters impaired for the Sulfate Standard and to allow Minnesota to complete the task that Congress reserved for the states when it adopted the CWA—the determination of which waters are subject to the Standard, which inseparably contains both a designated use and a criteria. In the event EPA does proceed with the impairment listing, please make the necessary changes to reflect our comments regarding the Embarrass River and Second Creek.

Respectfully,

Rob Beranek
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Director – Environmental Permitting and Regulatory Affairs
Cleveland-Cliffs Inc.

U. S. Steel Corporation
Minnesota Ore Operations
P.O. Box 417
Mt. Iron, MN 55768

June 30, 2021

United States Environmental Protection Agency
Region 5
77 West Jackson Boulevard
Chicago, IL 60604-3590

Re: Addition of Waters to Minnesota's 2020 List of Impaired Waters under Clear Water Act, Section 303(d)

Dear United States Environmental Protection Agency:

United States Steel Corporation (U. S. Steel) is a global steel producer with mining operations on Minnesota's Mesabi Iron Range where taconite is mined and processed into iron ore pellets for use in U. S. Steel's steelmaking facilities. U. S. Steel's Minnesota Ore Operations is composed of two facilities, Keetac in Keewatin and Minntac in Mt. Iron, with almost 1,800 employees. U. S. Steel appreciates the opportunity to comment on the United States Environmental Protection Agency (EPA) *Decision Document Regarding the Sulfate Impaired Waters EPA is Adding to the Minnesota 2020 Clean Water Act Section 303(d) List.*

On March 26, 2021, the United States Environmental Protection Agency (EPA) partially approved and partially disapproved Minnesota's 2020 Clean Water Act (CWA), 33 U.S.C. § 1251 et seq., Section 303(d) list (Minnesota 2020 Section 303(d) list).[1] Specifically, the EPA disapproved of Minnesota's decision not to identify on the Minnesota 2020 Section 303(d) list any water quality limited segments (WQLSs) for sulfate impairment. The EPA stated that Minnesota's decision to exclude these WQLSs with existing and readily available data and information indicating sulfate impairment was inconsistent with CWA Section 303(d) and EPA's implementing regulations.[2] On April 27, 2021, the EPA identified for inclusion on the Minnesota 2020 Section 303(d) list 30 waters impaired for sulfate that still require total maximum daily loads (TMDLs) under CWA Section 303(d) and the implementing regulations at 40 C.F.R. § 130.7.[3] The EPA's proposed list includes:

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[1] EPA *Decision Document for the Partial Approval of Minnesota's 2020 Clean Water Act 303(d) List*, March 26, 2021. [hereafter referred to as EPA Partial Approval Decision Document]

[2] EPA Partial Approval Decision Document

[3] EPA *Decision Document Regarding the Sulfate Impaired Waters EPA is Adding to the Minnesota 2020 Clean Water Act Section 303(d) List*, April 27, 2021. [hereafter referred to as EPA Sulfate Impaired Waters Decision Document]

- three waters in the vicinity of Keetac: Hay Lake (AUID 31-0037-00), the southwest bay of Swan Lake (AUID 31-0067-03), and Swan River (AUID 07010103-753); and
- four waters in the vicinity of Minntac: Little Sandy Lake (AUID 69-0729-00), Sandy Lake (AUID 69-0730-00), Sand River (AUID 09030002-501), and Pike River (AUID 09030002-503).

The listing of these waters as impaired for sulfate has potential to negatively impact U. S. Steel's Minnesota Ore Operations.

In general, U. S. Steel disagrees with the EPA's proposed listing of waters as impaired for sulfate based on:

- None of the 30 waters that the EPA is proposing to add to the Minnesota 2020 Section 303(d) list have been officially designated as wild rice waters and thus it is not appropriate to list them as impaired for sulfate. It is also not the appropriate procedure for the EPA to assign and/or designate beneficial uses for waters as part of their review of a state's impaired waters list.
- Minnesota's Class 4A wild rice sulfate water quality standard has been demonstrated to be overly protective and not scientifically supported; as such is inappropriate to enforce. Furthermore, Minnesota has been working to develop and implement a more scientifically supportable standard. EPA should use its allowable discretion to refrain from acting until this work is complete.
- Minnesota law bars the MPCA from listing wild rice waters as impaired under CWA Section 303(d). The EPA should refrain from acting on a state issue and allow Minnesota to determine the proper path forward.
- The EPA's assessment has overapplied the wild rice sulfate water quality standard both spatially and temporally.
- Assessment and listing of impaired waters in Minnesota under CWA Section 303(d) should be in accordance with the MPCA's *Guidance Manual for Assessing the Quality of Minnesota Surface Waters for Determination of Impairment*, which does not include methodology for assessing sulfate impairments associated with the wild rice beneficial use.
- The EPA Sulfate Impaired Waters Decision Document does not include the specific sulfate water quality data sets used to assess the waters and create the table in Appendix 2: Waters EPA is adding to the Minnesota 2020 303(d) List. Without access to the specific sulfate water quality data sets used by the EPA, it is not possible to assess the quality, appropriateness, or completeness of the data.
- The economic costs for compliance with the 10 mg/L wild rice sulfate standard are substantial and not economically feasible.

- Indirect emissions associated with water treatment to decrease sulfate concentrations are a significant source of greenhouse gas emissions, which would exacerbate climate change and thus negatively affect more wild rice waters than discharges to specific waterbodies.
- As part of this CWA 303(d) process, both the EPA and MPCA consulted extensively with Tribal Governments and also considered information submitted by WaterLegacy; however, there was limited to no outreach to other stakeholders, including those with active discharge permits to these waters or the general public that use these waters. The lack of transparency with some stakeholders is very concerning.

Each of these issues associated with EPA's proposed listing of waters as impaired for sulfate is discussed in further detail below.

Waters Proposed as Impaired for Sulfate are not Designated as Wild Rice Waters

Minnesota Rules part 7050.0470 designates 24 waters as wild rice waters.[4] The EPA's review of the Minnesota 2014, 2016, and 2018 Section 303(d) lists appropriately only considered the wild rice sulfate water quality standard for these 24 waters specifically designated as wild rice waters.[5] However, none of the 30 waters that the EPA is currently proposing to add to the Minnesota 2020 Section 303(d) list have been designated in Minnesota Rules part 7050.0470 as wild rice waters.

The MPCA's 2017 proposed rule amendments included a list of approximately 1,300 waters that were proposed to be designated for a wild rice beneficial use.[6] This proposed list of wild rice waters was specifically disapproved by an Administrative Law Judge (ALJ)[7] and the rule amendments were withdrawn.[8] The ALJ's criticism of the MPCA's 2017 proposed list of wild rice waters included that "in making its determinations as to which water bodies would be included in the list, the MPCA did not explicitly apply the standards it intends to use in future rulemakings to determine whether a water

[4] Minnesota Rules part 7050.0460, subpart 3 and part 7050.0470, subpart 1

[5] EPA Sulfate Impaired Waters Decision Document, Part I.A

[6] MPCA *Proposed Rules Amending the Sulfate Water Quality Standard Applicable to Wild Rice and Identification of Wild Rice Waters*; Revisor's ID Number 4324 [hereafter referred to as MPCA's 2017 proposed rule amendments]

[7] Chief Administrative Law Judge's Order on Review of Rules, *In the Matter of the Proposed Rules of the Pollution Control Agency Amending the Sulfate Water Quality Standard Applicable to Wild Rice and Identification of Wild Rice Rivers*, April 12, 2018

[8] MPCA, Environmental Analysis and Outcomes Divisions, *Notice of Withdrawn Rules for Proposed Rules Amending the Sulfate Water Quality Standard Applicable to Wild Rice and Identification of Wild Rice Waters*; Revisor's ID Number 4324, April 26, 2018

body should be added to the list of wild rice waters",[9] but rather "used a weight-of-evidence approach as it reviewed the corroborating evidence from sources to determine if the wild rice beneficial use exists or has existed in a water"[10] in which "many of the supporting documents used in the MPCA's review do not contain complete information about the density or acreage of wild rice".[11]

Despite the documented issues with the MPCA's 2017 proposed list of wild rice waters, both the EPA and the MPCA are now asserting that it is the minimum list of waters to which the wild rice beneficial use applies.[12] This is not an appropriate assertation as the list was disapproved by the ALJ and has not been adopted into Minnesota rule or submitted to the EPA for review as a revision to Minnesota's water quality standards.

Designation of beneficial uses should be conducted in accordance with CWA Section 303(c) and promulgated in Minnesota rule. It is not appropriate for the EPA and/or MPCA to circumvent these procedures and it is not appropriate for the EPA to assign and/or designate beneficial uses for waters as part of their review of a state's CWA Section 303(d) list. The EPA has previously indicated they agree that it is not appropriate to use the assessment process established in CWA 303(d) to displace the process for establishing and revising water quality standards outlined in CWA 303(c).[13]

Furthermore, it is critical for the designation of a wild rice beneficial use for a waterbody or segment of a waterbody to be undertaken on a case-by-case basis with a careful review of the evidence as to whether the wild rice beneficial use has been "actually attained in the water body on or after November 28, 1975".[14] For example: The EPA has included Little Sandy Lake (AUID 69-0729-00) and Sandy Lake (AUID 69-0730-00) on their list of waters to be added to the Minnesota 2020 Section 303(d) list as impaired for sulfate.[15] In 1987, the Minnesota Department of Natural Resources (MDNR) conducted a game lakes survey of these two lakes and observed that wild rice was "absent from both

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[9] Chief Administrative Law Judge's Order on Review of Rules, *In the Matter of the Proposed Rules of the Pollution Control Agency Amending the Sulfate Water Quality Standard Applicable to Wild Rice and Identification of Wild Rice Rivers*, April 12, 2018

[10] Report of the Chief Administrative Law Judge, *In the Matter of the Proposed Rules of the Pollution Control Agency Amending the Sulfate Water Quality Standard Applicable to Wild Rice and Identification of Wild Rice Rivers*, January 9, 2018

[11] Report of the Chief Administrative Law Judge, *In the Matter of the Proposed Rules of the Pollution Control Agency Amending the Sulfate Water Quality Standard Applicable to Wild Rice and Identification of Wild Rice Rivers*, January 9, 2018

[12] EPA Sulfate Impaired Waters Decision Document, Parts I.B and II.A

[13] EPA *Decision Document for the Approval of Minnesota's 2014 Clean Water Act Section 303(d) List*, May 29, 2018, Appendix 2 (p. 3-4)

[14] 40 C.F.R. § 131.3(e)

[15] EPA Sulfate Impaired Waters Decision Document, Appendix 2

lakes."[16] Subsequent wild rice surveys conducted between 2006 and 2012 observed sparse to no wild rice stands in Little Sandy and Sandy Lakes.[17] Studies of Little Sandy and Sandy Lakes have also indicated a lack of wild rice seed bank in the sediment, which precludes wild rice growth.[18] Little Sandy and Sandy Lakes are clear examples of waters included on the EPA's list of waters to be added to the Minnesota 2020 Section 303(d) list that should not be designated with a wild rice beneficial use and thus should not be listed as impaired for sulfate. These examples call into question the entire list of water segments that the EPA is asserting the wild rice beneficial use applies to. Designation or modification of beneficial uses is required to follow a structured and scientific process to ensure that beneficial uses assigned to a particular waterbody are appropriate for that waterbody and are based on sound evidence and data; this cannot be accomplished under the scope of a CWA 303(d) listing review.

A water cannot be listed as impaired for a water quality standard associated with a beneficial use that has not been designated for the water. Thus, because the 30 waters the EPA is proposing to add to the Minnesota 2020 Section 303(d) list have not been officially designated as wild rice waters, it is not appropriate to list them as impaired for sulfate.

Minnesota's Overly Protective Wild Rice Sulfate Water Quality Standard is Inappropriate to Enforce

Minnesota's Class 4A 10 mg/L sulfate water quality standard "applicable to water used for production of wild rice during periods when the rice may be susceptible to damage from high sulfate levels"[19] has been demonstrated to be overly protective and not scientifically supported. Standard toxicity testing, including that conducted by Dr. John Pastor[20] and Fort Environmental Labs[21] have proven that sulfate, in and of itself, does not impede the growth of wild rice below concentrations of 2,500 mg/L. As such, it is inappropriate to enforce this standard. The inappropriateness of enforcing this standard was recognized by the Minnesota State Legislature in 2015/2016 when they decided "the agency shall

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[16] Lightfoot, J. (1987, July 21). *Game Lakes Survey Sandy Lake & Little Sandy* [Memorandum]. Minnesota Department of Natural Resources.

[17] Northeast Technical Services, Inc., *U.S. Steel Minntac Twin Lakes Wild Rice Restoration Opportunities Plan Final Report*, February 28, 2019 (Twin Lakes refers to Little Sandy and Sandy Lakes)

[18] Northeast Technical Services, Inc., *U.S. Steel Minntac Twin Lakes Wild Rice Restoration Opportunities Plan Final Report*, February 28, 2019 (Twin Lakes refers to Little Sandy and Sandy Lakes)

[19] Minnesota Rules part 7050.0224, subpart 2

[20] Pastor, J., *Effects of enhanced sulfate and sulfide concentrations on wild rice germination and growth: results from a hydroponics experiment*, December 2013

[21] Fort, D.J., Mathis, M.B., Walker, R., Tuominen, L.K., Hansel, M., Hall, S., Richards, R., Grattan, S.R., and Anderson, K., *Toxicity of Sulfate and Chloride to Early Life-Stages of Wild Rice (Zizania Palustris)*, Journal of Environmental Toxicology and Chemistry, September 2014

not list waters containing natural beds of wild rice as impaired for sulfate under section 303(d) of the federal Clean Water Act, United States Code, title 33, section 1313" until an updated rulemaking takes effect.[22]

The inappropriateness of the 10 mg/L numeric sulfate standard was also recognized by the MPCA when they proposed in 2017 to replace it with "an equation that translates a protective concentration of sulfide in the sediment porewater to a calculated sulfate concentration in the overlying water that will be protective of wild rice in that particular wild rice water".[23] The MPCA stated that "because of the relationship between sulfate in the water, sulfide in the porewater, and iron and carbon in the sediment, an equation is the most accurate approach to protecting wild rice".[24] The MPCA also noted that "wild rice populations had been observed growing in waters significantly greater than 10 mg/L".[25] This phenomenon has been observed in Hay Lake downstream of Keetac's discharges[26], and in the Sand River just upstream of MN Hwy 169,[27] where good to excellent stands of wild rice consistently grow at sulfate levels higher than the 10 mg/L standard.

The 10 mg/L sulfate standard also fails to consider that there are many other factors that impact wild rice. The MPCA has previously acknowledged that sulfate is not the only factor that impacts wild rice growth and health and that "water clarity, water level, and many other factors affect wild rice presence and health".[28] The MPCA has also previously acknowledged "the variability of the conditions for wild rice growth", the existence of "other factors that limit the growth of wild rice (e.g. it will not grow where water levels vary too widely)", and the complex relationships between "the variables affecting wild rice presence and growth".[29] Due to the many complex factors that influence and impact wild rice, the existing standard focused solely on sulfate concentrations is often overly protective and thus inappropriate to enforce.

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[22] Wild Rice Water Quality Standards, Chapter 4 – S.F. No. 5 (2015, 1st Special Session) (Subsection (a)(2)); Sulfate Effluent Compliance, Ch. 165, S.F. No. 3376 (2016, Regular Session)

[23] MPCA *Statement of Need and Reasonableness, Amendment of the Sulfate Water Quality Standard Applicable to Wild Rice and Identification of Wild Rice Waters, Minn. R. Chapters 7050 and 7053*, July 2017 [hereafter referred to as MPCA 2017 proposed rule SONAR], Part 1.D

[24] MPCA 2017 proposed rule SONAR, Part 1.D

[25] MPCA 2017 proposed rule SONAR, Part 6.E.4

[26] Barr Engineering Company, *Application for Site-Specific Sulfate Standard(s) Hay Lake, Hay Creek, Swan Lake (including Swan Lake Southwest Bay), and Swan River (Swan Lake outlet to confluence with Snowball Creek);* December 2014

[27] Northeast Technical Services, Inc., *U.S. Steel Minntac Twin Lakes Wild Rice Restoration Opportunities Plan Final Report*, February 28, 2019 (Twin Lakes refers to Little Sandy and Sandy Lakes)

[28] MPCA 2017 proposed rule SONAR, Part 10

[29] MPCA 2017 proposed rule SONAR, Part 6.D.1

The courts have long held that EPA has discretion to refrain from enforcing provisions of the CWA while awaiting state action. In *Envtl. Def. Fund, Inc. v. Costle, 657 F.2d 275*, the court held that requiring mandatory EPA intercession would breach the state review process required by the CWA. The court stated that "it is logical that EPA should refrain from acting until the states have completed an initial effort to update the standards as they deem appropriate. For EPA to intercede prior to the initial completion of the state review process would also disserve the mandate within Section 101(b) of the Clean Water Act,". As Minnesota is in the process of reviewing and updating the sulfate standard, EPA should refrain from interceding to enforce an invalid standard.

Minnesota Law Bars MPCA from Listing Wild Rice Waters as Impaired under CWA Section 303(d)

The Minnesota legislature enacted a law that prohibits the MPCA from listing wild rice waters as impaired in accordance with CWA Section 303(d). As provided by Laws 2015, First Special Session chapter 4 – S.F. No, 5, article 4, section 136(a)(2), "the agency shall not list waters containing natural beds of wild rice as impaired for sulfate under section 303(d) of the federal Clean Water Act, United States Code, title 33, section 1313" until an updated rulemaking takes effect.[30] The EPA's decision to list numerous waters as impaired for sulfate is in direct contrast to the spirit of this law. It would be prudent for the EPA to respect the decision that the Minnesota legislature made in the best interest of their own state.

Overapplication of the Wild Rice Sulfate Water Quality Standard

In the EPA's assessment, the wild rice sulfate water quality standard has been overapplied both spatially and temporally. The Minnesota Class 4A sulfate water quality standard is specifically "applicable to water used for production of wild rice during periods when the rice may be susceptible to damage from high sulfate levels".[31]

The current sulfate water quality standard is only applicable during a portion of the year (specifically "during periods when the rice may be susceptible to damage by high sulfate levels").[32] Wild rice is an annual plant, which germinates in May (+/- 30 days) and senesces in September. Seeds which are not harvested or consumed by wildlife fall to the sediment and lie dormant in the sediment, to germinate the next spring. Several studies have indicated that exceedingly high levels of sulfide would need to

[30] Wild Rice Water Quality Standards, Chapter 4 – S.F. No. 5 (2015, 1st Special Session) (Subsection (a)(2))
[31] Minnesota Rules part 7050.0224, subpart 2
[32] Minnesota Rules part 7050.0224, subpart 2

be present to impact wild rice seeds and subsequent germination and emergence.[33,34] For these reasons, the current wild rice sulfate standard is a seasonal standard, applicable only during the growing season. In the Mesabi Nugget NPDES/SDS Permit MN0067687 (issued December 28, 2012)[35], the MPCA set a precedent for applying the current sulfate water quality standard seasonally when they "concluded that the 10 mg/L sulfate standard is applicable to portions of the Partridge River used for wild rice production April 1 through August 31".[36] As the standard is not applicable year-round, waters should not be designated as impaired year-round.

Minnesota Class 4A establishes water quality applicable to agricultural waters. Specifically, the quality of Minnesota Class 4A waters is required to be "such as to permit their use for irrigation without significant damage or adverse effects upon any crops or vegetation usually grown in the waters or area, including truck garden crops".[37] This combined with the wild rice standard being specifically "applicable to water used for production of wild rice" indicates that the standard should only apply to wild rice stands of a size and density suitable to support wild rice harvesting. The 24 wild rice waters currently designated in Minnesota Rules part 7050.0470 are listed as such because they have long histories of containing harvestable crops of wild rice.

Typically, only specific portions of a water segment or lake include habitat capable of supporting wild rice. Thus, it is important to consider whether appropriate wild rice habitat exists and where specifically it exists as part of determining whether the sulfate water quality standard is applicable. Based on presence or absence of appropriate habitat [such as appropriate hydrology (e.g., flow, water level), geomorphology (e.g., substrate, bank stability), sediment chemistry, energy sources (e.g., sunlight, nutrients), and other macrophyte populations], it is often inappropriate to apply the sulfate water quality standard to entire water segments or entire lakes. Where there is no wild rice habitat, there should be no sulfate impairment.

Some of the 30 waters the EPA is proposing to add to the Minnesota 2020 Section 303(d) list include segments with no wild rice or wild rice habitat. An example is the previously discussed Little Sandy Lake (AUID 69-0729-00) and Sandy Lake (AUID 69-0730-00), which the EPA has included on their list

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[33] Pastor, J., *Effects of enhanced sulfate and sulfide concentrations on wild rice germination and growth: results from a hydroponics experiment*, December 2013

[34] Fort Environmental Labs, *Definitive Hydroponics-Based Wild Rice (Zizania palustris) Sulfide Toxicity Testing* (ENVI101-00352), July 2015

[35] Mesabi Nugget NPDES/SDS Permit MN0067687 (issued December 28, 2012 to Mesabi Nugget Delaware, LLC), Chapter 1, Part 6.1

[36] MPCA *Mesabi Nugget Delaware, LLC - Request for Approval of Findings of Fact, Conclusions of Law, and Order and Authorization to Grant a Variance and to Reissue National Pollutant Discharge Elimination System/State Disposal System Permit MN0067687*, October 23, 2012, Part II.B.ii

[37] Minnesota Rules part 7050.0224, subpart 2

of waters to be added to the Minnesota 2020 Section 303(d) list as impaired for sulfate.[38] As discussed, a 1987 MDNR game lakes survey observed that wild rice was "absent from both lakes",[39] 2006 and 2012 wild rice surveys observed sparse to no wild rice stands,[40] and studies have indicated a lack of wild rice seed bank in the sediment, which precludes wild rice growth.[41] Because Little Sandy and Sandy Lakes have been documented to contain minimal wild rice stands and minimal potential for wild rice to grow naturally (due to lack of seed bank), it is not appropriate to apply the wild rice beneficial use and associated sulfate water quality standard to these waters .

It is important to note that many factors impact wild rice abundance other than sulfate. These factors interrelate with whether or not there is appropriate habitat for wild rice. The MPCA asserted during the 2017 proposed rule amendment process (prior to withdrawal of the amendments) that it is not the concentration of sulfate in the water that directly impacts wild rice but rather the concentration of sulfide in the sediment pore water which is depended on both the concentration of sulfate in the overlying water and the concentrations of carbon and iron in the sediment.[42] The MPCA has also previously recognized that many other factors also impact wild rice growth and health, such as water clarity, water level, weather, habitat, invasive species, etc.[43] In addition to these factors, other factors known to affect wild rice abundance include changes in natural hydrology, water level fluctuations, competitive (native) species, human developments and impacts (e.g., shoreline development, boat

[38] EPA Sulfate Impaired Waters Decision Document, Appendix 2

[39] Lightfoot, J. (1987, July 21). *Game Lakes Survey Sandy Lake & Little Sandy* [Memorandum]. Minnesota Department of Natural Resources.

[40] Northeast Technical Services, Inc., *U.S. Steel Minntac Twin Lakes Wild Rice Restoration Opportunities Plan Final Report*, February 28, 2019 (Twin Lakes refers to Little Sandy and Sandy Lakes)

[41] Northeast Technical Services, Inc., *U.S. Steel Minntac Twin Lakes Wild Rice Restoration Opportunities Plan Final Report*, February 28, 2019 (Twin Lakes refers to Little Sandy and Sandy Lakes)

[42] MPCA 2017 proposed rule SONAR, Part 1.B

[43] MPCA 2017 proposed rule SONAR, Parts 10 and 10.E

traffic), disease and diminishing natural generic diversity, climate change, and water level and stream channel alterations due to beaver dam presence and subsequent removal.[44,45,46,47,48,49,50,51,52]

As an example:

- A study was undertaken for Little Sandy Lake and Sandy Lake to evaluate factors that have or are influencing wild rice growth and identify opportunities to restore wild rice.[53] Multiple adverse influences on wild rice growth and development were identified: 1) general lack of a viable wild rice seed bank in the sediment of the lakes; 2) water depth and fluctuations throughout the lake system is not conducive to wild rice growth and development; and 3) competing aquatic vegetation has become established in large areas of the lake system. A fourth likely adverse influence on wild rice growth and development in the lakes system is natural site-specific sediment conditions unrelated to surface water or sediment pore water characteristics.

As demonstrated by these examples, there are multiple factors that should be considered before applying the wild rice sulfate standard to a water segment or lake. Such considerations should be part of any assessment methodology used for listing of waters as impaired for wild rice sulfate.

Assessment and Listing of Impaired Waters should be in accordance with the MPCA 2020 Assessment and Listing Document

Assessment and listing of impaired waters in Minnesota under CWA Section 303(d) should be in accordance with the MPCA's *Guidance Manual for Assessing the Quality of Minnesota Surface Waters for Determination of Impairment* as developed for the 2020 assessment and listing cycle (MPCA 2020

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[44] Wisconsin Department of Natural Resources, *Wetland Restoration Handbook for Wisconsin Landowners* (Chapter 12), 2010

[45] Wisconsin Agricultural Extension Service, *Wisconsin Biology Technical Note 4, Wild Rice Seeding Guidelines*, undated

[46] MDNR, *Natural Wild Rice in Minnesota - A Wild Rice Study document submitted to the Minnesota Legislature*, February 2008

[47] MDNR, *Managing Minnesota's Shallow Lakes for Waterfowl and Wildlife*, December 2010

[48] MDNR, *A Handbook for Collecting Vegetation Plot Data in Minnesota: The Releve Method*, 2007

[49] Poff, N.L., Brinson, M. and Day, J.W., *Aquatic Ecosystems and Global Climate Change*, 2002

[50] Walker, R.D., Pastor, J. and Dewey, B.W., *Effects of wild rice (Zizania palustris) straw on biomass and seed production in northern Minnesota*, Canadian Journal of Botany (84, pp. 1019-1024), 2006

[51] Walker, R.D., Pastor, J. and Dewey, B.W., *Litter quantity and nitrogen immobilization cause oscillations in productivity of wild rice (Zizania palustris) in northern Minnesota*, Ecosystems (13, p. 485:498), 2010

[52] Vogt, D., *Wild Rice Monitoring and Abundance in the 1854 Ceded Territory (1998-2014)*, 1854 Treaty Authority, 2014

[53] Northeast Technical Services, Inc., *U.S. Steel Minntac Twin Lakes Wild Rice Restoration Opportunities Plan Final Report*, February 28, 2019 (Twin Lakes refers to Little Sandy and Sandy Lakes)

Assessment and Listing Document).[54] It is our understanding that this document should have been reviewed and approved by the EPA.

The MPCA 2020 Assessment and Listing Document does not include methodology for assessing sulfate impairments associated with the wild rice beneficial use. The EPA Sulfate Impaired Waters Decision Document describes the methodology used by the EPA to assess waters for sulfate impairment[55]; however, it is improper to use this methodology as it was not included in the approved MPCA 2020 Assessment and Listing Document.

Furthermore, the methodology used by EPA presents an inconsistency with determining sulfate concentrations. In one scenario, values are averaged while in another, the maximum value is used. Although this inconsistency is an issue, the main concern is the determination to use a maximum sample value to represent sulfate concentrations in waterbodies. This approach could be capturing anomalies in the waterbody with respect to sulfate concentrations. EPA should explain why they used the maximum concentration value observed in certain scenarios, beyond citing a March 15th communication from MPCA (which itself does not provide sufficient justification). In any case, EPA should seek to characterize the average daily conditions of the waterbody when determining appropriate sulfate concentrations for waterbody segments, which will be more indicative of whether sulfate concentration will impact wild rice habitat.

EPA Decision Document Does Not Include Sulfate Water Quality Data Sets Used to Assess Waters

The EPA Sulfate Impaired Waters Decision Document does not include the specific sulfate water quality data sets used to assess the waters and create the table in Appendix 2: Waters EPA is adding to the Minnesota 2020 303(d) List. Sulfate water quality data sets received from others are included in Appendix 3 (received from Tribes) and Appendix 4 (received from WaterLegacy); however, based on the narrative in the EPA Sulfate Impaired Waters Decision Document[56] and comparison of the Appendices 3 and 4 data sets with the data summaries presented in the Appendix 2 table, it appears that the EPA also used other data that are not included with the EPA Sulfate Impaired Waters Decision Document.

Without access to the specific sulfate water quality data sets used by the EPA, it is not possible to assess the quality, appropriateness, or completeness of the data. In fact, attempts to reconstruct the assessment and findings failed. The seven waters in the vicinity of U. S. Steel operations were used as

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[54] MPCA *Guidance Manual for Assessing the Quality of Minnesota Surface Waters for Determination of Impairment: 305(b) Report and 303(d) List*, MPCA Document Number: wq-iw1-04k, February 2021

[55] EPA Sulfate Impaired Waters Decision Document, Part III.A

[56] EPA Sulfate Impaired Waters Decision Document, Part III.A

examples to show that EPA has limited stakeholders' ability to replicate the methodology in determining sulfate concentrations. See Table 1 for the results of the replication attempt compared to EPA's results. Note that the results of only three of the seven waters were successfully reproduced.

Regarding Sand River, none of the values matched. Notably, EPA used 46 data points in their assessment; however, the data supplied in Appendix 3 only contained 29 data points for the AUID and period of review. The minimum and maximum values are largely different, verifying that a different set of data was used by EPA than what is available to stakeholders. Likewise, the results for nearly all parameters were unable to be reproduced for Sandy Lake and Pike River (only the maximum values match). There are discrepancies between the number of data points used in EPA's assessment versus those available in the appendices: for Sandy Lake, 29 versus 18, respectively; for Pike River, 18 versus 16, respectively.

Several challenges barred a successful replication attempt of the Swan Lake results. It appears that the AUID listed in EPA's Appendix 2 no longer exists. EPA listed *Swan Lake (SW Bay), AUID 31-0067-03*. However, MPCA's surface water data tool (Environmental Quality Information System (EQuIS) via Environmental Data Access (EDA)) lists *Swan Lake (West Bay), AUID 31-0067-01* and *Swan Lake (Main Basin), AUID 31-0067-02*. Likewise, data for *Swan Lake (SW Bay), AUID 31-0067-03* does not exist in Appendix 3. Since AUID's 31-0067-01 and 31-0067-02 do exist in the appendices, their data was first used to try and reproduce the results. This did not work, however, as there were 13 data points for AUID 31-0067-01 and 14 data points for AUID 31-0067-02. EPA only used six data points in their assessment. Data was then downloaded from MPCA's surface water quality tool for both alternative AUID's. The data for Swan Lake (Main Basin) contained 19 data points and thus was not used in the replication effort. The data for Swan Lake (West Bay) only contained six data points, which matched the number of observations that EPA evaluated and thus was used in the replication effort. Assessment of the surface water quality data for AUD 31-0067-01 produced matching results for four of the seven parameters. The mean, standard deviation and maximum values did not match, meaning this was not an accurate set of data and cannot be used for replication.

These failed replication efforts, although significant effort was expended to attempt to do so, substantiate stakeholders' uncertainty related to the quality, appropriateness, and completeness of the data. Furthermore, in limiting access to full and complete sets of data, EPA also failed to provide the equations used to calculate sulfate concentrations. This exacerbates stakeholders' inability to replicate the methodology. If the EPA is confident in their assessment of these waters, it would be prudent for them to make the associated data sets and calculations available for scrutiny.

On a final note, some of the data used in the assessment do not represent current water quality conditions (as noted in Table 1). The data set used by the EPA included results from samples collected

more than a decade ago.[57] Only current data should be used to adequately characterize the concentrations of sulfate in the waters. Any data older than a decade is not representative of water quality and if EPA chooses to pursue this proposal, they should update their assessment to include only the relevant data.

[57] EPA Sulfate Impaired Waters Decision Document, Part III.A

Table 1: Comparison of EPA's Results to Replication Results (discrepancies are bordered in red)

Water Body Name and AUID	Result Source	Swan River 07010103-753	Sand River 09030002-501	Pike River 09030002-503	Hay Lake[3] 31-0037-00	Swan Lake[4] 31-0067-03	Little Sandy Lake[3] 69-0729-00	Sandy Lake 69-0730-00
Total Observations per AUID	EPA R[1]	11	46	18	9	6	18	29
	ARR[2]	11	29	16	9	6	18	18
Number of Observations greater than 10 mg/L	EPA R[1]	10	44	15	9	4	18	28
	ARR[2]	10	28	11	9	4	18	18
Percent Observations above 10 mg/L	EPA R[1]	91%	96%	83%	100%	67%	100%	97%
	ARR[2]	91%	97%	69%	100%	67%	100%	100%
Mean	EPA R[1]	22.14	104.08	22.19	44.67	19.50	220.22	141.03
	ARR[2]	22.14	102.14	20.79	44.67	20.52	220.22	164.61
Standard Deviation	EPA R[1]	8.75	79.52	11.75	20.49	16.94	109.61	81.29
	ARR[2]	8.75	73.82	13.91	20.49	11.00	109.61	87.78
Minimum	EPA R[1]	3.00	0.05	3.00	10.24	6.90	87.00	3.05
	ARR[2]	3.00	7.69	2.22	10.24	6.90	87.00	72.60
Maximum	EPA R[1]	38.40	286.00	43.00	78.00	42.50	475.00	310.00
	ARR[2]	38.40	252.00	43.00	78.00	45.33	475.00	310.00

(1) Environmental Protection Agency Results (EPA R)– these are the results presented in the Decision Document.

(2) Attempted Replication Results (ARR) – these are the results from attempts to replicate the data and results.

(3) Six of the nine data points for Hay Lake are from 2009 and six of the eighteen data points for Little Sandy Lake are from 2010.

(4) The AUID presented in EPA's table, Swan Lake (SW) Bay 31-0067-03, does not exist in the data provided in the appendices. Swan Lake (West Bay) AUID 31-0067-01 was used for the ARR.

Economic Costs for Compliance with the 10 mg/L Wild Rice Sulfate Standard are Substantial and Not Economically Feasible

While the technology required to meet the 10 mg/L surface water quality standard proposed by EPA has not been evaluated by U. S. Steel, the cost for compliance with the 10 mg/L would lead to substantial economic hardship to U. S. Steel based on the information currently available.

U. S. Steel has recently evaluated costs required to treat water in the Minntac Tailings Basin to conform with Minnesota's groundwater quality standard for sulfate.[58] The evaluation identified technologies required to lower the concentration of sulfate in the Tailings Basin from approximately 960 mg/L to 357 mg/L to meet the groundwater sulfate standard of 250 mg/L at the property boundary.

The treatment process evaluated includes: lime and soda ash softening; microfiltration; two stage membrane separation process of nanofiltration followed by reverse osmosis of the nanofiltration concentrate; and evaporation and crystallization of the brine. The electrical load required to treat 17,500 gallons per minute is estimated to be 12 megawatts.

In addition to treatment, other technologies such as Passive Reactive Barriers and/or cutoff walls may also be needed to meet the 250 mg/L sulfate standard for groundwater. The estimated capital cost for all technologies is estimated to be $455,000,000. The annual operation and maintenance costs, based on year-round operation, are estimated to be $38,000,000.

A financial analysis using guidance provided by EPA, demonstrates that achieving full compliance with the groundwater quality standards would lead to substantial economic hardship to U. S. Steel. In addition, the MPCA, in a study of wastewater treatment options for sulfate, has concluded that existing treatment technologies are too expensive.[59]

The proposed action to list waters would have devasting economic impacts to communities without a corresponding environmental benefit due to other factors impacting potential wild rice waters.

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[58] U. S. Steel, *Application for a Variance from Water Quality Standards for Groundwater*, June 2021

[59] Minnesota Pollution Control Agency, *Sulfate and municipal wastewater: Study confirms lack of affordable technology*, July 2018

Indirect Emissions associated with Water Treatment to Decrease Sulfate Concentrations Would Affect More Wild Rice Waters than Discharges to Specific Waterbodies

The indirect emissions resulting from generating the electrical power required to operate the water treatment system required to conform with the 250 mg/L groundwater quality standards previously discussed will release significant amounts of greenhouse gases and other pollutants.

The water treatment system required for strict conformance with the standard, as previously described, is estimated to have an electrical power demand of nearly 12 megawatts. This is the equivalent of the electrical power consumed by 4,400 to 9,900 households. Indirect greenhouse gas emissions from coal required to generate 12 MW, exceed 100,000 tons per year CO_2 equivalent.

There is an increased public and societal sensitivity to carbon emissions. Minnesota has placed carbon emissions as a goal to reduce as a state. As a company, U. S. Steel has announced carbon reduction goals and is leading the industry to reduce carbon emissions.

Increased greenhouse gas emissions likely exacerbate climate change. Wild rice is sensitive to climate change. The following hazards resulting from climate change will harm wild rice: spreading of wild rice diseases (e.g. brown spot), extreme precipitation events leading to increased water depths, excessive warmth and decreased cold dormancy necessary for germination, and increased invasive carp populations.[58] While a discharge of sulfate to a specific waterbody may have potential to negatively affect wild rice within that waterbody, exacerbation of climate change could negatively affect wild rice throughout Minnesota and beyond.

Transparency of the 303(d) Process

As part of this CWA 303(d) process, both the EPA and MPCA consulted extensively with Tribal Governments[59] and also consulted with and considered information submitted by WaterLegacy[60]; however, there was limited to no outreach to other stakeholders. The listing of Minnesota waterbodies as impaired for sulfate will impact many other stakeholders that have active discharge permits to these waters or otherwise use these waters, including municipalities, businesses, and the general public. We respectfully request that both agencies undertake more transparent and equitable consultation with potentially effected stakeholders.

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[58] MPCA *Final Technical Support Document: Refinements to Minnesota's Sulfate Water Quality Standard to Protect Wild Rice*, August 11, 2017.

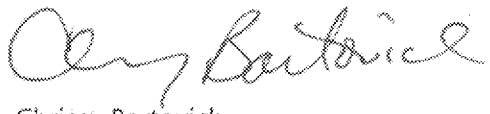
[59] EPA Sulfate Impaired Waters Decision Document, Part IV

[60] EPA Sulfate Impaired Waters Decision Document, Part V

U. S. Steel urges the EPA to reconsider their proposed listing of waters as impaired for sulfate. The current proposal is inconsistent with the Clean Water Act in that it applies a water quality standard to waters that have not been officially designated with the associated beneficial use; enforces a sulfate water quality standard that has been demonstrated to be overly protective and not scientifically supported; overapplies the wild rice sulfate water quality standard both spatially and temporally; does not follow approved methodology for assessment and listing of impaired waters in Minnesota; would require water treatment systems with substantial economic costs and that could exacerbate climate change and thus negatively affect more wild rice waters than discharges to specific waterbodies; and has lacked transparency by not including the specific sulfate water quality data sets used to assess the waters and including limited to no outreach to stakeholders other than Tribal Governments.

Thank you for the opportunity to provide comments on the EPA *Decision Document Regarding the Sulfate Impaired Waters EPA is Adding to the Minnesota 2020 Clean Water Act Section 303(d) List*. Please do not hesitate to contact me for clarification or discussion at (218) 749-7364 or clbartovich@uss.com.

Respectfully submitted,



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June 30, 2021

Paul Proto
United States Environmental Protection Agency
Region 5
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

RE: Addition of Waters to Minnesota's 2020 List of Impaired Waters under Clean Water Act, Section 303(d)

Dear Mr. Proto:

Poly Met Mining, Inc. (PolyMet) appreciates the opportunity to comment on the U.S. Environmental Protection Agency (EPA)'s proposed inclusion of 30 additional waters in Minnesota's Clean Water Act (CWA) Section 303(d) Impaired Waters List (the "303(d) List") due to asserted impairments for sulfate in waters identified by the EPA as "wild rice waters." This list of additional waters and the EPA's decision document are provided in a letter from Tera Fong at the EPA to Katrina Kessler at the Minnesota Pollution Control Agency (MPCA) that was undated but signed on April 27, 2021 (collectively referred to as the "2021 EPA Designation Letter"). We are submitting this comment letter opposing the proposed inclusion of these additional waters on the 303(d) List, and request that these comments be considered as part of the record for the administrative process for completing the 303(d) List.

PolyMet's comments on this 2021 EPA Designation Letter are generally as follows:

- To start, the wild rice beneficial use and sulfate standard set forth in Minn. R. 7050.0224, subparts 1 and 2, applies only to water bodies formally designated by the MPCA as wild rice waters in accordance with procedures established by Minnesota law. None of the 30 waters proposed by the EPA to be added to the 303(d) List have been designated by the MPCA as wild rice waters in Minnesota rules, and therefore those waters cannot be listed as impaired for a water quality standard that does not apply. Nor would it be appropriate for the EPA (or MPCA) to designate those waters as wild rice waters using the CWA 303(d) process. Such designations can only be completed under the CWA Section 303(c) process and applicable Minnesota law.
- The Minnesota Legislature has prohibited the MPCA from designating additional wild rice waters beyond those currently designed under Minn. R. 7050.0224 and 7050.0470 except in connection with the adoption of new wild rice rules.[1] The 2015 Minnesota law also specifically prohibits the MPCA from listing any water as impaired under CWA Section 303(d) for sulfate under the state's wild rice standard except in accordance with the adoption of new wild rice rules. Because no such new rules have been promulgated and approved,

[1] 2015 Minn. Laws, 1st Special Session chapter 4, article 4, § 136; 2011 Minn. Laws, 1st Special Session chapter 2, article 4, § 32.

EPA's proposed additions to the 303(d) List would require the MPCA to act directly contrary to Minnesota law.

- Even if the water quality standards for protection of wild rice in Minn. R. 7050.0224 were applicable to the waters in question, the EPA's proposed additions to the 303(d) List are inconsistent with the EPA-approved sulfate standard in Minn. R. 7050.0224, subpart 2. That standard applies only to waters "used for production of wild rice during periods when the rice may be susceptible to damage by high sulfate levels." *Id.* The 2021 EPA Designation Letter appears to assume that the presence of sulfate over the 10 mg/L at any time would be sufficient to result in a violation or impairment of the sulfate standard. But for there to be an impairment of the wild rice standard as listed in Minn. R. 7050.0224, subpart 2, there must be a showing that (1) elevated sulfate levels occurred in waters designated in Minn. R. as being used for the production of wild rice, (2) that such conditions occurred during periods when wild rice is susceptible to damage – which the MPCA has previously interpreted as during the growing season[2] – and (3) that the elevated levels of sulfate have actually caused damage to wild rice to prevent its production. The 2021 EPA Designation Letter neither recognizes these three criteria nor establishes that they are met in the waters proposed for listing. In fact, the relevant evidence shows that at least with respect to the water bodies in the immediate vicinity of PolyMet's property – the Embarrass River, the Partridge River, Second Creek, and several lakes – wild rice in several locations has been mapped consistently over a 10-year period, which indicates that the beneficial use has been attained and remains attainable, with no documentation of impairment to the health of the wild rice stands.
- The EPA's proposed addition of waters to the 303(d) List is inconsistent with the requirements and standards of the MPCA's *Guidance Manual for Assessing the Quality of Minnesota Surface Waters for Determination of Impairment: 305(b) Report and 303(d) List* (February 2021) ("MPCA 303(d) Guidance"). This MPCA 303(d) Guidance was developed to define the required data and information and lay out the criteria by which water bodies are assessed to determine if beneficial uses are supported or impaired. The EPA's proposed action for the 303(d) List does not follow this MPCA 303(d) Guidance in that it does not comply with the steps in the assessment process, does not satisfy applicable data collection and review standards, and does not meet the requirements for reporting and public review.

[2] While the 2021 EPA Designation Letter (Decision Document at 13) references the MPCA's Statement of Need and Reasonableness, *Amendment of the sulfate water quality standard applicable to wild rice and identification of wild rice waters* (July 2017) ("MPCA 2017 Wild Rice SONAR") as supporting their statement that wild rice is vulnerable to sulfate year-round, that contradicts the MPCA's issuance of an NPDES permit to Mesabi Nugget that "concluded that the 10 mg/L sulfate standard is applicable to portions of the Partridge River used for wild rice production April 1 through August 31." MPCA *Mesabi Nugget Delaware, LLC - Request for Approval of Findings of Fact, Conclusions of Law, and Order and Authorization to Grant a Variance and to Reissue National Pollutant Discharge Elimination System/State Disposal System Permit MN0067687*, October 23, 2012, Part II.B.ii. The MPCA also recognized in the MPCA 2017 Wild Rice SONAR, at 20, that it has historically interpreted the sulfate standard in Minn. R. 7050.0224, p. 2 to be applicable only during the growing season. The MPCA's proposed changes to the wild rice/sulfate water quality standards to make them applicable on a year-round basis were not adopted and therefore have no legal effect.

Because other designations in Minnesota have followed the MPCA 303(d) Guidance, the EPA's failure to do so would cause inconsistencies in how impaired waters are designated.[3]

- Even if it were appropriate for the EPA to designate beneficial use listings and create new wild rice waters as part of the CWA 303(d) process, the EPA's proposal would over apply the designated use listings and the asserted impairments with respect to at least some of the 30 water bodies proposed for inclusion to the 303(d) List. In particular, the EPA seeks to add entire rivers or streams to the 303(d) List even though wild rice stands only have been found in limited portions of those water bodies. In addition, the EPA appears to have used sulfate data from limited segments of a water body and applied it to the entire water body it's proposing as impaired. As noted above, the sulfate water quality standard in Minn. R. 7050.0224, subpart 2 only applies where wild rice is in production and where actual damage is caused during the growing season. To implement these requirements, Minn. R. 7050.0470 has identified wild rice waters by lake or for streams, by reach. Similarly, in the draft rules proposed by the MPCA in 2017, the agency identified wild rice waters by lake or reach – or in other words – by a smaller unit than an entire water body, consistent with the data showing the presence of wild rice. The EPA's proposed 303(d) List assesses the impairment to an overall water body rather than following the MPCA's practice of breaking them down by reaches where the state agency believed wild rice was present.
- The EPA has not provided the specific data sets for sulfate sampling that led to its proposal to add the waters in question to the 303(d) List. This is inconsistent with the MPCA 303(d) Guidance. Furthermore, in the 2021 EPA Designation Letter, the EPA says it is continuing to review data, suggesting that its proposed additions to the 303(d) List may be premature. This lack of complete data makes review and comment or comparison to separate data sets very difficult. Moreover, it appears that at least in some cases, the data obtained for use in the EPA's analysis was not evenly distributed across specific water bodies, resulting in the overapplication of the proposed impairment.

Given these concerns, particularly the problems with respect to data collection and assessment, PolyMet asks that the EPA withdraw the proposed additions to the 303(d) List and that the MPCA take the lead in a more robust process that engages all stakeholders – including the EPA – to assess these matters in a way that is consistent with the Clean Water Act and Minnesota law.

Some of the foregoing items are addressed in further detail below.

The 30 Waters Proposed for Impairment Are Not Designated as Wild Rice Waters

Waters proposed in the 2021 EPA Designation Letter as impaired for sulfate are not designated by the MPCA in the Minnesota Rules as wild rice waters. Specifically, Minn. R. 7050.0470 only

[3] The steps in the MPCA 303(d) Guidance are not optional. Indeed, the MPCA 303(d) Guidance goes through a public review process whenever there are major changes to the Guidance.

identifies 24 waters as wild rice waters (identified with a [WR])[4]. The EPA's proposed listing of 30 additional waters as wild rice waters is contrary to the explicit language of Minn. R. 7050.0470, and Minn. R. 7050.0224, subpart 1, which creates the wild rice water classification. Nothing in the Clean Water Act allows the EPA to alter Minnesota's EPA-approved rules in this manner. Because the waters in question have not been included within the wild rice beneficial use, they cannot lawfully be designated under state or federal law as impaired for that use.[5]

In 2017, the MPCA proposed modifications to the wild rice sulfate standard and the list of wild rice waters. See MPCA's Statement of Need and Reasonableness, *Amendment of the sulfate water quality standard applicable to wild rice and identification of wild rice waters* (July 2017) ("MPCA 2017 Wild Rice SONAR"). The proposed changes included designating approximately 1,300 new wild rice waters under Minn. R. 7050.0470. These changes went through the public rulemaking process but were ultimately rejected by the Chief Administrative Law Judge.[6] Under the requirements of Minnesota law, this rulemaking process is the only authorized process for designating additional wild rice waters.[7] Any such state rulemaking to add additional wild rice waters would also be required to go through and satisfy all of the requirements of CWA Section 303(c) for revisions to Minnesota's water quality standards.

The EPA states in its *Decision Document Regarding the Sulfate Impaired Waters EPA is Adding to the Minnesota 2020 Clean Water Act Section 303(d) List* ("EPA Decision Document") that because the State of Minnesota has not identified where the wild rice uses apply, "EPA's final action on the 2014, 2016, and 2018 Minnesota Section 303(d) lists reviewed only existing and readily available water quality data for the 24 waters specifically designed as wild rice waters in Minn. R. 7050.0470." In other words, the EPA recognizes that under federal and state law, it may not add to Minnesota's existing list of 24 wild rice waters as set forth in Minn. R. 7050.0470. But the EPA is now proposing to add to that list of designated wild rice waters. The EPA should continue to evaluate only those 24 waters specifically designated as wild rice waters in Minn. R. 7050.0470. Any other action is inconsistent with the requirements of the Clean Water Act.

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[4] Minn. R. 7050.0460 lists the abbreviations and their definitions, as used in Minn. R. 7050.0470. Minn. R. 7050.0470 specifically lists 23 wild rice waters; however, it also incorporates by reference the separate tables that the MPCA maintains of stream reaches, which includes one additional wild rice water.

[5] The EPA seems to have interpreted the numeric sulfate water quality standard in Minn. R. 7050.0224, subpart 2 by overlooking the three criteria that define the applicability of the numeric sulfate standard, as described above, and by assuming that the numeric standard applies to water bodies not designated as wild rice waters. This assumption is contrary to the structure of Minn. R. 7050.0224, which appears intended to make the numeric sulfate requirements of subpart 2 of the rule applicable only to water bodies designated as wild rice waters pursuant to subpart 1 of the rule. It is for that reason that the Minnesota Legislature required the MPCA to adopt rules clarifying the application of the wild rice standards and that the MPCA proposed expanding the list of wild rice waters to which the sulfate narrative and numeric standards would apply. MPCA 2017 Wild Rice SONAR, at 19 – 22. The fact that the administrative law judge disapproved the MPCA's proposed rules and that as a result no wild rice rules have not yet been authorized is not a rationale for the EPA to override Minnesota's existing wild rice water quality standards. Under federal and state law, the EPA cannot utilize the CWA 303(d) process to change Minnesota law.

[6] This process with respect to the MPCA's proposed rulemaking, including the decisions by the Office of Administrative Hearings rejecting the proposed rules, is documented on the MPCA's wild rice website: https://www.pca.state mn.us/water/protecting-wild-rice-waters

[7] 2015 Minn. Laws, 1st Special Session chapter 4, article 4, § 136; 2011 Minn. Laws, 1st Special Session chapter 2, article 4, § 32.

Federal law delegates to states the authority to establish designated uses of waters, which should be done under the CWA 303(c) process. The designation of a beneficial use for a segment of a water body needs to be looked at on a segment-by-segment basis, determining in each instance that the use as "actually attained in the water body on or after November 29, 1975," in accordance with 40 CFR § 131.3(e). Reliable evidence demonstrates that a wild rice beneficial use is not attainable in certain segments of some of the water bodies that are proposed by the EPA to be added to the 303(d) List, and that the criteria for application of the numeric sulfate standard are not met. We will describe this evidence in more detail below; but it is not appropriate to use the CWA 303(d) process to establish the beneficial use of a water body, to bypass the state's delegated authority to do so under 40 CFR § 131.4(a), or to define designated uses outside the CWA 303(c) process. Designating a water body as impaired for a water quality standard that does not have that designated beneficial use defined in rule is in effect an unpromulgated rulemaking with respect to the designated use and is not allowed under either the Clean Water Act or Minnesota law.

The EPA Has Incorrectly Applied the Sulfate Water Quality Standards for Protection of Wild Rice

Even if the sulfate water quality standard in Minn. R. 7050.0224 were not limited to the 24 water bodies designated by the MPCA as wild rice waters as described above, the EPA appears to have misunderstood the sulfate water quality standards in its proposed 303(d) List. Minn. R. 7050.0224 identifies beneficial uses and water quality criteria (narrative and numeric) for Class 4A waters, which are waters protected for agricultural and wildlife uses. Subpart 1 of this rule explains that these Class 4A standards are necessary to provide the following protections:

> *Wild rice is an aquatic plant resource found in certain waters within the state. The harvest and use of grains from this plant serve as a food source for wildlife and humans. In recognition of the ecological importance of this resource, and in conjunction with Minnesota Indian tribes, selected wild rice waters have been specifically identified [WR] and listed in part 7050.0470, subpart 1. The quality of these waters and the aquatic habitat necessary to support the propagation and maintenance of wild rice plant species must not be materially impaired or degraded. If the standards in this part are exceeded in waters of the state that have the class 4 designation, it is considered indicative of a polluted condition which is actually or potentially deleterious, harmful, detrimental, or injurious with respect to the designated uses.* (Emphasis added)

This portion of the rule is specific to the harvest and use of wild rice. Minn. R. 7050.0224, subpart 2 further provides that the use of class 4A waters is "for irrigation without significant damage or adverse effects upon any crops or vegetation usually grown in the waters or area, including truck garden crops." The rule then specifically refers to the United States Department of Agriculture's Handbook 60, which is titled "Diagnosis and Improvement of Saline and Alkali Soils" and is written for agricultural purposes. Additionally, Minn. R. 7050.0224, subpart 2 further describes the standard for protection of wild rice uses from sulfate impacts, as follows:

> *Sulfates (SO4) - 10 mg/L, applicable to water used for production of wild rice during periods when the rice may be susceptible to damage by high sulfate levels.* (Emphasis added)

Aerial photographs of the 24 waters designated as wild rice waters in Minn. R. 7050.0470 shows that the majority of these lakes and stream are dense with wild rice either in the main water body, all along the shorelines, and/or in large bays of the water body. Each of these water bodies has harvestable amounts of wild rice consistent with the requirements in Minn. R. 7050.0224. Five

examples are shown in Attachment 1 of this letter. None of these waters exhibit sparse stands of wild rice. In other words, the Minnesota rules are specifically designed – and have been implemented – to protect meaningful production and harvesting of wild rice. Just the presence of limited quantities of rice on occasional or historical bases is not sufficient to qualify for protection under Minn. R. 7050.0224. This fact is supported by the MPCA 2017 Wild Rice SONAR for the proposed changes in the wild rice rules, which states the following:

> *The MPCA adopted the current wild rice sulfate standard in 1973. A review of testimony presented at public hearings during that rulemaking shows that the standard was intended to apply to waters with natural wild rice stands and to waters used for commercial cultivation of wild rice. The word "production" was widely used at the time to describe both the growth and harvesting of natural stands of wild rice and commercial cultivation (Edman, 1975).*[8]

Given the nature and characteristics of the 24 waters designated as wild rice waters in Minn. R.7050.0470, and the criteria provided in Minn. R. 7050.0224, it is clear that Minnesota created water quality standards to protect the harvesting of wild rice, rather than to make the water quality standards applicable to any water that could have a single stem of wild rice or small densities of wild rice that are not practical to harvest or are not of significant value for wildlife. Critically for present purposes, the EPA approved these rules as written and when written. These binding, longstanding decisions and interpretations by the federal and state agencies should not be overturned by improper and non-transparent use of the CWA 303(d) process by the EPA.

In 2011, Minnesota enacted a law to further clarify the scope of the state's rules for protecting wild rice and applying the sulfate water quality standards to protect wild rice production[9]:

> *Before designating waters containing natural beds of wild rice as waters subject to a standard, the commissioner of the Pollution Control Agency shall establish criteria for the waters after consultation with the Department of Natural Resources, Minnesota Indian tribes, and other interested parties and after public notice and comment. The criteria shall include, but not be limited to, history of wild rice harvests, minimum acreage, and wild rice density.* (Emphasis added)

In other words, the state Legislature was not seeking to narrow the scope of wild rice protection, but rather than acting to ensure that the wild rice/sulfate water quality standards were applied consistently with their original intent and were not expanded in the manner that the EPA is now

[8] MPCA 2017 Wild Rice SONAR at 29

[9] 2011 Minn. Laws, 1st Special Session chapter 2, article 4, § 32(b).

proposing.[10] In 2015, Minnesota enacted further legislation directing and supporting the rulemaking process required by the 2011 law.[11]

The MPCA has spent several years working to implement these requirements of the 2011 and 2015 wild rice laws enacted by the State of Minnesota. The MPCA explained in its MPCA 2017 Wild Rice SONAR that "in order to identify the waters that support the beneficial use, the MPCA reviewed a number of sources to identify those waters where there is a demonstrated harvest of the wild rice by humans or evidence of use of the grain as a food source by wildlife."[12] The SONAR further described the process the agency went through to evaluate water bodies for inclusion in the MPCA's proposed revised list of wild rice waters as asking stakeholders for evidence "showing a past or current human harvest of wild rice, the presence of at least two acres of wild rice in a water body, or other evidence that shows that the water body supports or since November 28, 1975, has supported the beneficial use."[13]

As part of this wild rice rulemaking process required by the Minnesota wild rice laws of 2011 and 2015, MPCA also acknowledged that the term "waters used in the production of wild rice" as used in the applicable water quality standards must be tied to a harvestable stand of wild rice in their response to the administrative law judge (ALJ) during the rulemaking process. The ALJ proposed adding to the definition of a wild rice water "where wild rice is present." MPCA responded that this was not an appropriate addition under prior agency interpretations and the current state wild rice laws, and specifically stated that the term "waters used in the production of wild rice" did not mean "where wild rice is merely present without any credible history of wild rice harvest or density or acreage information."[14]

This history is important because Minnesota law makes a rule (or an interpretation of a rule) invalid if it "exceeds the statutory authority of the agency." Minn. Stat. § 14.45. "An administrative regulation is valid only to the extent it is consistent with the statutory authority pursuant to which it is promulgated. If a regulation is not consistent with the statute, it is ineffective and does not have the force and effect of law." *Stasny by Stasny v. Minn. Dept. of Commerce*, 474 N.W.2d 195, 198 (Minn. Ct. App. 1991) (citing *Vang v. Commissioner of Pub. Safety*, 432 N.W.2d 203, 206 (Minn. App. 1988), *pet. for rev. denied* (Minn. Dec. 30, 1988)). Thus, the MPCA, in applying the numeric and narrative water quality standards, has acted properly in declining to designate new wild rice

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[10] The Minnesota Legislature in its 2011 law on wild rice protection directed the MPCA to amend Minn. R. Ch. 7050 to accomplish three tasks. First, new rules must "address water quality standards for waters containing natural beds of wild rice, as well as for irrigation waters used for production of wild rice." 2011 Minn. Laws, Ch. 2, §32(a). Second, new rules must "designate each body of water, or specific portion thereof, to which wild rice water quality standards apply." *Id.* Finally, the MPCA must "designate the specific times of year during which the standard applies." *Id.* These tasks are all consistent with the existing Minnesota rules for protection of wild rice that have been approved by the EPA. Nothing in the Clean Water Act precludes Minnesota from pursuing these clarifications in its rules. EPA will have the opportunity under the Clean Water Act, including under the CWA 303(c) process, to review any new state rules when they are adopted in accordance with applicable Minnesota law. In the meantime, the Clean Water Act does not authorize the EPA to undermine the implementation of the current rules or to side-step the requirements of state law by utilizing the CWA 303(d) process for unauthorized purposes.

[11] 2015 Minn. Laws, 1st Special Session chapter 4, article 4, § 136

[12] MPCA 2017 Wild Rice SONAR at 12

[13] *Id.* at 16

[14] MPCA Response to the Chief ALJ. "In the Matter of Proposed Rules of the MPCA Amending the Sulfate Water Quality Standard Applicable to Wild Rice and Identification of Wild Rice Waters," March 28, 2018 at 12

waters beyond the 24 water bodies listed in the existing rules and in implementing those existing rules to apply the narrative and numeric sulfate standards only to water bodies meeting the longstanding interpretation of the requirement under Minn. R. 7050.0224 that such waters be "used in the production of wild rice."

The EPA, in its 2021 EPA Designation Letter, is employing an interpretation of the Minnesota water quality standards that deviates from the scope of state's rules for protecting wild rice. In particular, the EPA's proposed 303(d) List includes waters not used for the production of wild rice, which as described above is a prerequisite for application of the Minnesota water quality standards adopted by MPCA in compliance with the responsibilities delegated to the state agency by the EPA.

This misinterpretation of the state's water quality standards is demonstrated by the EPA's action in proposing, in some instances, that entire water bodies be listed as impaired for sulfate when there is no evidence that production wild rice, as defined in the Minnesota rules, is occurring throughout those waters. A good example of this is with respect to the Embarrass River where the EPA has identified the entire river as impaired in the proposed 303(d) List, whereas the MPCA included only two segments of the river as potential wild rice waters in its proposed rulemaking process.[15] There are numerous other instances where the EPA has designated entire water bodies as impaired on the proposed 303(d) List when there is no evidence that those waters meet the Minnesota definition of "waters used in the production of wild rice."

PolyMet's Wild Rice Data Demonstrate Errors in the Proposed 303(d) List

PolyMet's own wild rice analyses provide specific examples of the EPA's misinterpretation of the sulfate numeric and narrative standards if, as is not the case for the reasons already discussed, those standards were applicable to waters not designated as wild rice waters. PolyMet completed wild rice surveys in the water bodies upstream and downstream from our project site for 10 consecutive years between 2009 and 2018. Annual surveys have documented the locations of wild rice stands and categorized the relative wild rice density along the riverbanks and lake shores. We also collected water quality data at the wild rice stands during these surveys. We have a report that consolidates the data collected between 2013 through 2018 by water body, with total stand size and the bounds of fluctuation (standard deviation, minimums and maximums of stand size). This included ten water bodies that the EPA proposes to add to the 303(d) List, as discussed in the EPA's Decision Document, Appendix 2: "Waters EPA is adding to the Minnesota 2020 303(d) List (April 28, 2021)." The data we have shows that at least four of these ten water bodies cannot arguably be classified as "waters used in the production of wild rice," as shown on the following table. A number of other water bodies identified by the EPA are also questionable based on this data, depending on what definition of the term "waters used in the production of wild rice" is used.

[15] Included in the EPA's Decision Document, Appendix 1 is the MPCA's list of approximately 1,300 proposed wild rice waters (updated April 2021) from the 2017 proposed rule. The MPCA's list included two segments of the Embarrass River (04010201-579 and 04010201-A99), but did not include 04010201–B00. EPA has arbitrarily extrapolated the MPCA's proposed inclusion of the two Embarrass River segments to also include 04010201–B00 in Appendix 2, as listed in Footnote 2. There is no data or justification in the EPA's Decision Document for inclusion of this segment of the Embarrass River on the 303(d) List.

Name	AUID[16]	Wild Rice Presence[17]
Embarrass River	04010201-A99	There was a very small stand noted over the 10 years, with an average size of 0.055 acres; this is of questionable value for harvest or wildlife.
Embarrass River	04010201-B00	This AUID was not included in MPCA's 1,300 proposed wild rice waters and appears to be arbitrarily added by the EPA to their list.[18] There was no wild rice mapped in this stretch in the 10 years of wild rice surveys.
Wynne Lake	69-0434-02	There was no wild rice mapped in this stretch in the 10 years of wild rice surveys.
Embarrass Lake	69-0496-00	There was no wild rice mapped in this stretch in the 10 years of wild rice surveys.

These 10 years of surveys show that wild rice is relatively abundant in the Upper St. Louis River (upstream of the Partridge River confluence), the Lower Partridge River (downstream of Colby Lake), and a few of the lakes included in the Embarrass River Chain of Lakes. Conversely, wild rice is either not present or present in fewer locations at much lower densities in the Upper Embarrass River (upstream of Wynne Lake) and Second Creek. The changes in the presence or absence of wild rice correlate well with the changes in river morphology and the landforms through this area, which are tied to the landscape type associations (LTA) in the area.

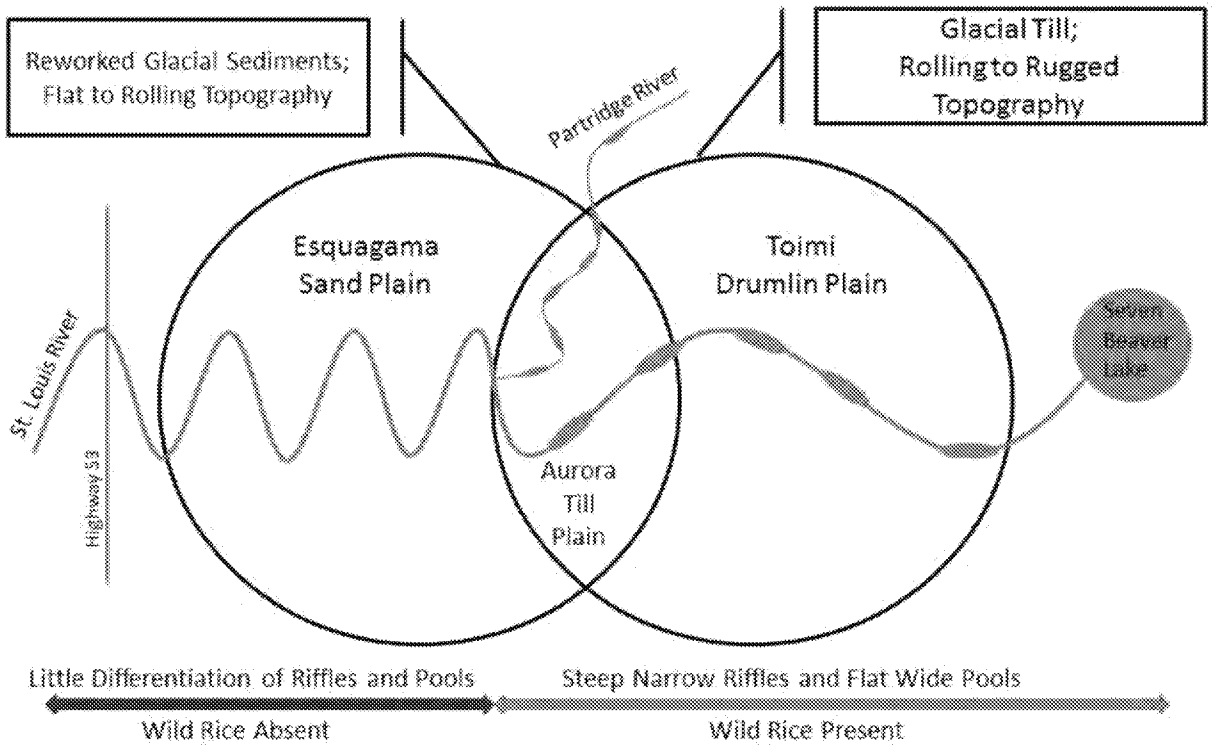
Two additional studies PolyMet has completed of the area water bodies show the relationship between the LTA, river morphology, hydrology, channel conditions, and wild rice presence from 2009 through 2013[19]. River morphology has been identified as one of the key factors that influences wild rice habitat, along with biotic factors, water quality and soil chemistry, energy sources, water levels, and climate variability. In the water bodies upstream and downstream from the PolyMet project site, it was found that wild rice occurs most often, and at highest abundance, in morainal and glacial till landforms. These landforms result in a relatively wide channel, slow current, and mucky sediment that show little evidence of extreme flow or water level variability. Conversely, sand plain LTA had less or no wild rice present, particularly on the Esquagama Sand Plain, where the Lower Embarrass River (04010201-B00) and a segment of the St. Louis River are found. The following figure demonstrates the relationship between wild rice presence and the LTA on the St. Louis River.

[16] AUID is the assessment unit identifier. This was previously called WID (water body identifier) in the MPCA 2017 Wild Rice SONAR. This AUID designation refers to a specific segment or reach of a stream or a lake.

[17] Barr Engineering Co., *Wild Rice Stand Variability Study*, Prepared for Poly Met Mining, Inc., May 2019

[18] In EPA's Decision Document, Appendix 1 is the MPCA's list of approximately 1,300 proposed wild rice waters (updated April 2021), which includes two segments of the Embarrass River (04010201-579 and 04010201-A99) but does not include 04010201-B00. EPA arbitrarily extrapolated the MPCA's inclusion of the Embarrass River to also include 04010201-B00 in Appendix 2, as listed in Footnote 2. There is no data or justification included on why this segment was included.

[19] Barr Engineering Co., *Influence of Landscape on Wild Rice Occurrence in the Upper St. Louis River, Partridge River, Embarrass River, Wyman Creek, and Second Creek*, Prepared for Poly Met Mining, Inc., March 2014; Barr Engineering Co., *Influence of Geomorphology on Wild Rice Occurrence in the Upper St. Louis River*, Prepared for Poly Met Mining, Inc., April 2013



This figure shows how the Partridge River is split between LTA, too. In the 10 years of surveys conducted by PolyMet, wild rice has only been found in the lower Partridge River, immediately upstream of but mostly downstream of Colby Lake, with no wild rice found upstream of river mile 14 (which occurs midway between Wyman Creek and Longnose Creek). However, the EPA proposed listing of the Partridge River in the 303(d) List would designate the entirety of the Partridge River (all approximately 38 river miles) as impaired for the wild rice standard, including the 24-plus river miles that do not have any documented wild rice.

Thus, in addition to it being inappropriate to designate these waters as wild rice waters without going through the appropriate federal and state rulemaking processes, these PolyMet studies show that if certain waters were to be listed as impaired pursuant to those processes, the impairment should not include the entirety of the water body. Since the MPCA's 2017 rulemaking process, the segments or reaches of streams appear to have been further administratively segmented by the MPCA, as shown in the EPA's Decision Document, Appendix 1, which is listed as having been updated April 2021. In review of this updated list of water bodies upstream and downstream of the PolyMet project site, it appears the AUIDs, each of which identifies a specific reach of a stream, have been further and more discretely segmented from what was evaluated in the MPCA 2017 Wild Rice SONAR. This additional segmenting appears to reflect MPCA efforts to align stream segments more closely with the criteria in Minn. R. 7050.0224, including those criteria relating to the production of wild rice.

A final example of the overly broad application of this impairment findings is in the sulfate data referenced in the EPA's documentation. The EPA's Decision Document, Appendix 2 includes a summary of water quality data that were evaluated to determine if the 10 mg/L wild rice standard is being exceeded; however, the EPA does not include the data used in this analysis or the location of where this data was collected. For the Partridge River, for example, it lists 53 observations of water quality data used in the analysis, with 96% of the data being above 10 mg/L, with a mean of 92.8

mg/L, a minimum of 6 mg/L, and a maximum of 883 mg/L. Figure 4.2.2-3 in PolyMet's Final Environmental Impact Statement ("FEIS") shows the variability of sulfate from 2009-2013 in water bodies upstream and downstream of the PolyMet's site, with a summary of the data on FEIS Table 4.2.2-3. FEIS Figure 4.2.2-3 and Table 4.2.2-3 are included as Attachment 2 to this comment letter. The sulfate data shown on Figure 4.2.2-3, as listed in Table 4.2.2-3, for the Lower Partridge River (below Colby Lake) ranges from 17-411 mg/L and the Upper Partridge River (above Colby Lake) ranges from 5-21 mg/L sulfate. Based on FEIS Figure 4.2.2-3, there are no sulfate readings above 10 mg/L upstream of approximate river mile 14, which occurs midway between Wyman Creek and Longnose Creek. Therefore, even if the numeric sulfate limit were applicable, it would be inappropriate to designate the Partridge River as impaired above this point in the river.

In summary, if the current 303(d) listing process by the EPA were to proceed notwithstanding its inconsistency with federal and state law, it should at least be refined to correspond to the requirements in the Minnesota rules that the wild rice/sulfate water quality standards be applied only to "waters used in the production of wild rice," rather than to include the full water body or segments of the water body beyond where wild rice is readily mapped. Based on the surveys completed by PolyMet, most of the streams in the proposed 303(d) List within the PolyMet area do not have wild rice along the entirety of the identified segment, as discussed above. Furthermore, the EPA's proposed inclusion of streams near the PolyMet project is not consistent with the river segment already listed by the MPCA as a wild rice water in Minn. R. 7050.0470, where wild rice is present throughout the segment. Similarly, under Minn. R. 7050.0224, subpart 2, the numeric sulfate standard is only applicable where and when wild rice is in production and should only be applied in those areas, rather than being applied to the entire water body or reach of the streams as proposed in the EPA's 303(d) List. If any segment of stream is going to be considered impaired for the wild rice standard, it should be the segment where the wild rice stand is located.

The EPA Has Not Provided the Data used in the Decision

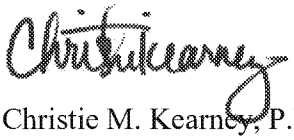
The EPA's Decision Document, Appendix 2 includes a summary of water quality data that were evaluated to determine if the water quality in various water bodies exceeds 10 mg/L (again based on the incorrect assumption that this numeric standard is applicable at all times to all waters even if they do meet the "production of wild rice" requirement); however, it did not include the data used in this analysis. PolyMet has been collecting water quality data in the water bodies upstream and downstream from our project site since 2006. As shown in the analysis above for sulfate data for the Partridge River, the location of the data used is as important as the statistical analysis of the data. It is clear that for the Partridge River, the majority of the data used was for the Lower Partridge River; however, these data apparently have been applied by the EPA to the entirety of the Partridge River. Without the data used by the EPA and the locations of the samples, as required under MPCA 303(d) Guidance, it is impossible to understand the analysis for evaluation and comment and for comparison against a similar dataset. PolyMet asks that the EPA provide the full dataset used as part of the public review process and provide opportunities to comment on that data before any further action to finalize the proposed 303(d) List is undertaken.

Conclusion

PolyMet appreciates the EPA's work with the MPCA in protecting Minnesota's waters. PolyMet is well aware that the issues surrounding the protection of wild rice and the applicable water quality standards are extremely important to a wide range of affected parties, PolyMet included. For all the reasons discussed above, PolyMet respectfully asks the EPA to reconsider its proposed additions to the 303(d) List and withdraw the proposed additions to the 303(d) List. PolyMet further requests that the MPCA take the lead in a more robust process that engages all stakeholders, including the EPA, to assess these matters in a way that is consistent with the Clean Water Act and Minnesota law.

Thank you for the opportunity to provide comments on this process. Please do not hesitate to contact me if you have questions about these comments at 218-461-7746 or ckearney@polymetmining.com.

Sincerely,
Poly Met Mining, Inc.



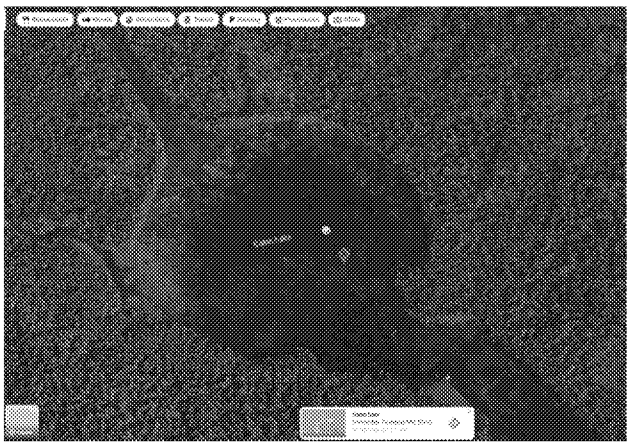
Christie M. Kearney, P.E.
Environmental Site Director

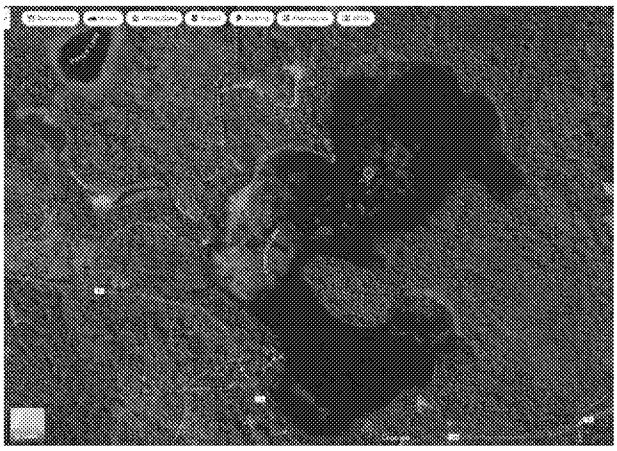
Enclosures:
Attachment 1: Examples of Wild Rice Waters Listed in Minnesota Rules 7050.0470
Attachment 2: NorthMet Mining Project and Land Exchange Final Environmental Impact Statement (FEIS) Figure 4.2.2-3 and Table 4.2.2-3

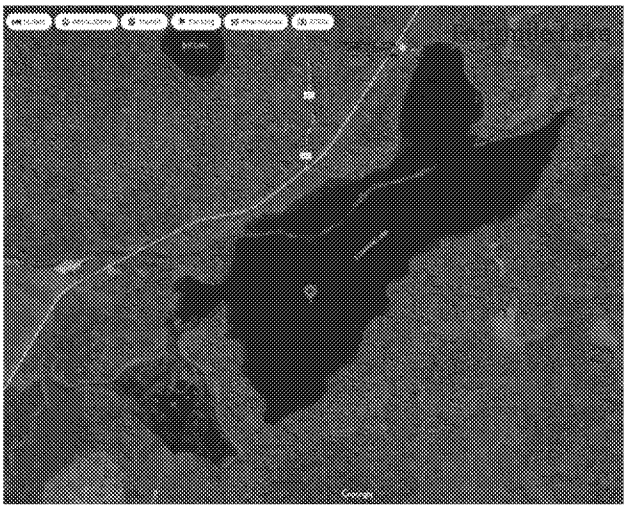
Attachment 1

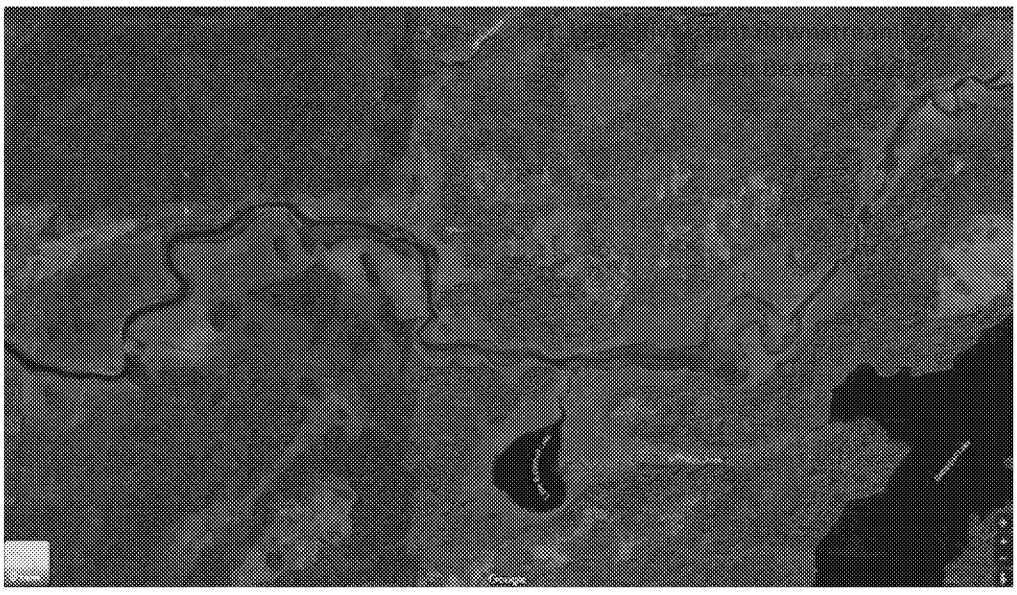
Examples of Wild Rice Waters Listed in Minnesota Rules 7050.0470

Attachment 1 – Examples of Wild Rice Waters Listed in Minnesota Rules 7050.0470









Attachment 2

NorthMet Mining Project and Land Exchange Final Environmental Impact Statement (FEIS) Figure 4.2.2-3 and Table 4.2.2-3

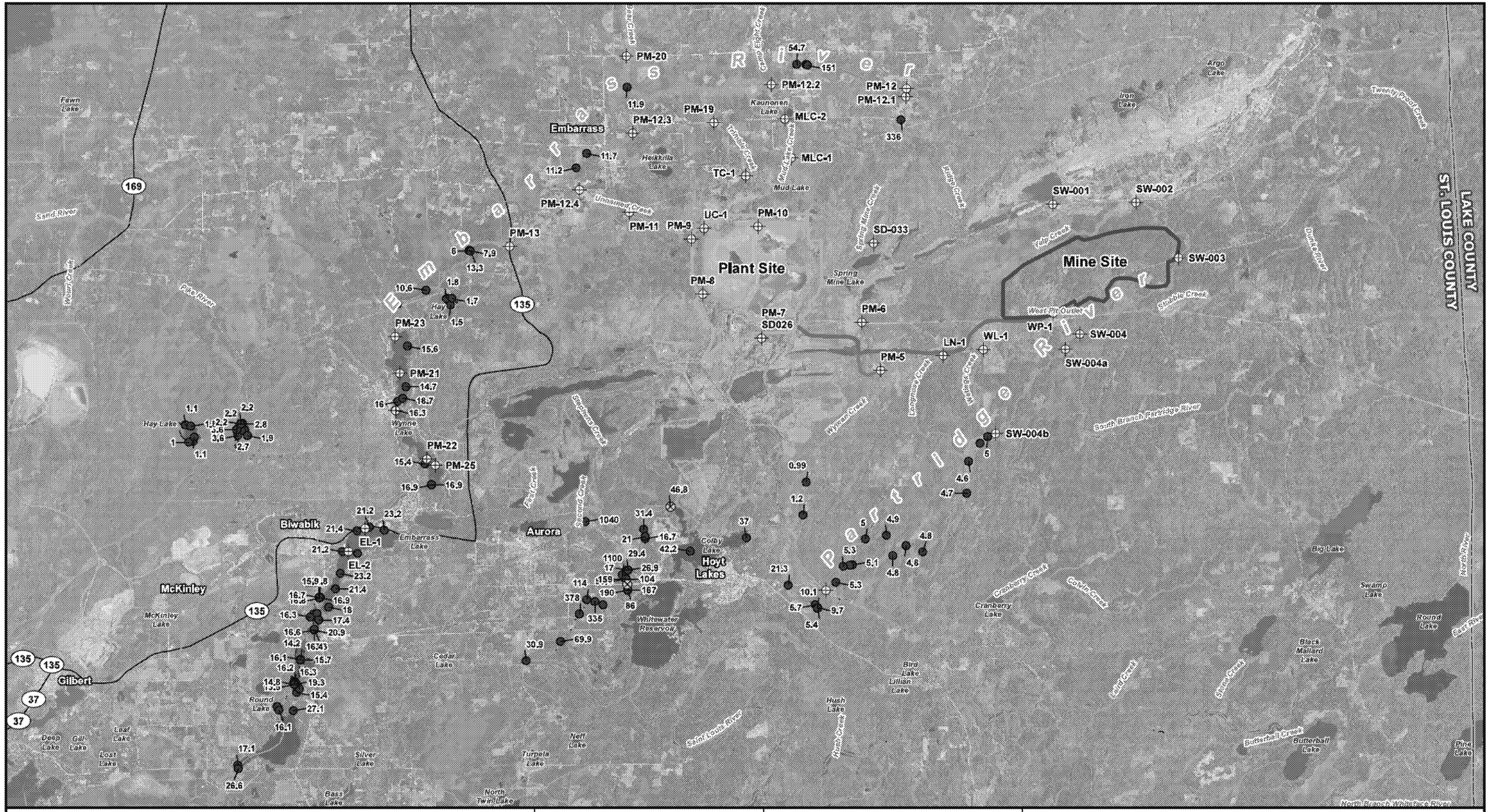


Figure 4.2.2-3
Sulfate Sampling Locations
NorthMet Mining Project and Land Exchange FEIS
Minnesota

November 2015

Table 4.2.2-3 Wild Rice Survey and Water Quality Monitoring Results

Locations Surveyed	Survey Year	Wild Rice Found?[1]	Density Factor[2] (Scale 1-5)	Sulfate Range[3] (mg/L)
Partridge River Watershed				
Upper Partridge River (above Colby Lake, portions)	09, 10, 11, 12	Yes (isolated)	1–3	5–21
Colby Lake	09, 10	No	---	37–42
Lower Partridge River (below Colby Lake)	09, 10, 11, 12	Yes	1–5	17–411
Wyman Creek	11, 12	No	---	---
Second Creek (portions)	09, 10, 11, 12	Yes (near mouth)	1–4	1,100
Embarrass River Watershed				
Upper Embarrass River (Spring Mine Creek to Sabin Lake)	09, 10, 11, 12	Yes (isolated)	1	6–151
Sabin - Wynne Lakes	09, 10, 11, 12	Yes (isolated)	1	15–16
Chain of Lakes (including Embarrass, Lower Embarrass, Cedar Island, Esquagama, Unnamed, and Fourth)	09, 10, 11, 12	Yes	1–5	14–27
Lower Embarrass River (Esquagama Lake to CR 95)	09, 10	No	---	---
Spring Mine Creek (portions)	09, 10, 11, 12	No	---	---
Trimble and Unnamed Creeks (portions)	10, 11, 12	No	---	---

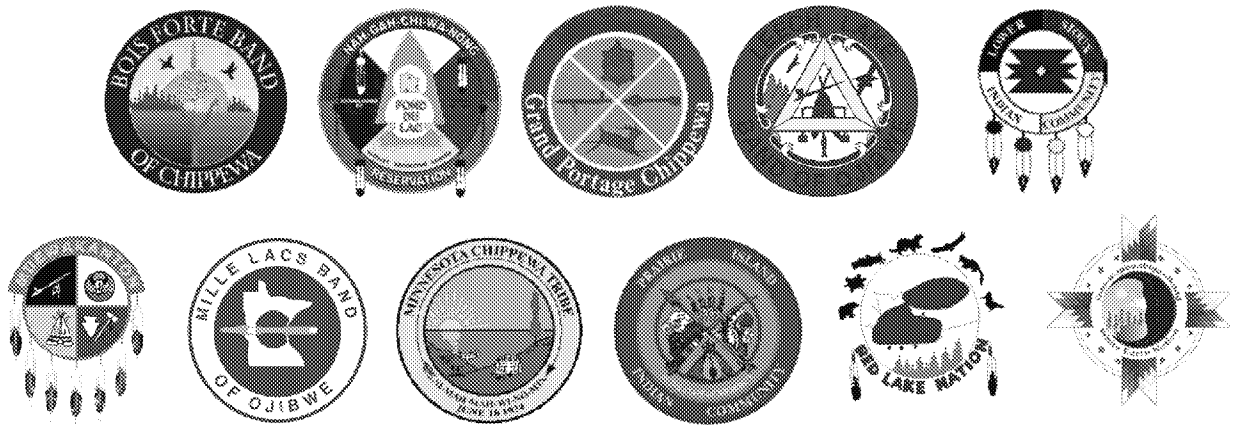
Sources: Barr 2010c; Barr 2011a; 2012a; Barr 2013l; Barr 2013p.

Notes:
[1] "Yes" indicates that wild rice was observed in at least one of the survey years. Simply finding wild rice in a survey is not the same as being designated a water used for the production of wild rice.
[2] Informal observational scale of relative wild rice density (1 – low density to 5 – high density)
[3] Range of water column sulfate concentration taken at time of wild rice survey. Samples were only taken when and where wild rice was observed. Values rounded to nearest 1 mg/L. Sample sizes were low resulting in relatively large variability within some individual waterbodies.

Surveys of the St. Louis River from Brookston to Lake Superior were conducted in 2009 and from the NorthMet Project area to the St. Louis Estuary in 2010. Wild rice was identified on the St. Louis River for a short distance downstream from its confluence with the Partridge River. The most dense stand (density factor of 2) was located just upstream of Highway 100, and a few sparse stands were also located approximately 500 and 1,000 ft further downstream (see Figure 4.2.2-3). Sulfate concentrations in 2010 in the St. Louis River near Highway 100 averaged 17.7 mg/L.

4.2.2.1.4 Mercury

Based on sampling done for the NorthMet Project Proposed Action from 2004 to 2013, total mercury concentrations in the Upper Partridge River average about 3.3 ng/L (Barr 2014m). At monitoring station SW-005, total mercury concentrations range from below the analytical detection limit to a maximum of 18.4 ng/L, with an average concentration of 4.3 ng/L. In Colby



June 30, 2021

Paul Proto, Environmental Scientist
US Environmental Protection Agency
77 W Jackson Blvd
Chicago, IL 60604
By email only: proto.paul@epa.gov

Re: Joint Tribal Comments on App'x 2 of EPA's Decision Document Regarding the Sulfate Impaired Wild Rice Waters EPA is Adding to the Minnesota's 2020 CWA Section 303(d) List).

Dear Mr. Proto:

The undersigned tribes truly appreciate EPA's effort to develop a list of sulfate impaired wild rice waters. In general, we believe EPA's overall approach to evaluating wild rice waters for impairment was systematic and well-reasoned, using existing, readily available data to assess as many wild rice waters as is currently possible. The Tribes have also conducted additional analysis using the same criteria but with certain other data sets that may not have been before EPA in its initial review, and present certain additional impaired wild rice waters for inclusion on the 2020 List and for future consideration. We appreciate additional time and opportunity to supply water quality data and maps identifying the date and locations the samples were collected in order to address this identified deficiency. We look forward to continued collaboration.

I. Comments on EPA Methodology

As noted, the Tribes generally agree that EPA used methodology that was both scientifically and legally sound for purposes of assembling the 2020 List of impaired wild rice waters. To summarize the 2020 methodology, EPA evaluated whether there was an exceedance of the numeric 10 mg/L sulfate criterion[1] using the long-term sulfate concentrations and a one-in-10-year return frequency within the 10-year period from October 1, 2008 to September 30, 2018. When minimal sulfate data were available between October 1, 2008 to September 30, 2018, EPA reviewed existing and readily available sulfate data collected in the year preceding (2007-2008) and the year following

[1] Minn. R. 7050.0224 subp. 2; *see also* Minn. R. 7050.0224, subp. 1 (narrative standard and antidegradation provisions for wild rice waters).

(2019) on a case-by-case basis to characterize sulfate conditions in lake and stream segments over the previous 10-year period. Sites were identified as impaired if the sulfate dataset demonstrated consistent exceedances of the numeric 10 mg/L sulfate criterion any time during 2008-2018. To establish impairment, at a minimum, datasets from two separate years were used within the time period and included at least five individual sulfate samples.

EPA also did not exclude data from consideration based on seasonality. The Tribes agree with this approach and it is also in accordance with 2017 MPCA's scientific evaluation of sulfate, which found that wild rice is vulnerable to elevated sulfate concentrations year-round *and* the existing standards does not specify or define a time when wild rice is susceptible to damage by high sulfate levels.

II. Additional wild rice waters to be listed as impaired

While EPA worked from MPCA's 2017 list of 1,300 wild rice waters (MPCA trimmed down the 2017 list from approximately 2,400 waters due to unknown rice density in forty percent of these known wild rice waters), EPA correctly recognized that more waters might be subject to the wild rice beneficial use. Therefore, EPA has committed to evaluating input received from tribal governments, and any additional relevant information received during this public notice and comment period. The results of the Tribes' analysis are attached hereto at Appendix 1, and include the following:

A. 19 additional wild rice waters not yet assessed by EPA should be listed on the 2020 List

19 additional waterbodies or waterbody segments should be added to the draft EPA 303(d) list. These waters were not assessed because they were not included in the 1,300 waters identified solely by MPCA as wild rice waters in 2017. But all appear on other wild rice waters lists, there is sufficient testing data in the state's databases, and pursuant to EPA's 2020 methodology, all should be listed now.

B. Two additional waters previously excluded, Birch Lake and the Kawishiwi River, should also be listed in the 2020 List.

Birch Lake, an impoundment on the Kawishiwi River, was the only water of the eight that MPCA considered in their assessment that wasn't considered sulfate impaired by the agency (and that was also excluded from EPA's initial list). Concentrations of sulfate found in Birch Lake in the 1970's demonstrated a likely impairment. However, it appears that since then, monitoring in the Kawishiwi River system has not included sulfate measurements.

To overcome this 40-year data deficit, both the 1854 Treaty Authority and Northern Minnesotans for Wilderness ("NMW") collected samples from Birch Lake in Dunka Bay and Bob's Bay as well as a few tributaries to Birch Lake and the Kawishiwi River. The results of the 2020 and 2021 sampling events demonstrate that concentrations of sulfate from the 1970's are similar to present-day concentrations, and that both Bob's Bay and Dunka Bay in Birch Lake are historically and currently sulfate WQLSs of the Kawishiwi River system. This is sufficient, at a minimum, to justify listing Bob's Bay in Birch Lake on the 2020 List. With only three modern samples from Dunka Bay, we request EPA's review and determination using both historical and modern data.

C. Segments of the lower St. Louis River should be listed in the 2020 list, and other segments may require further assessment before listing.

The St. Louis River supports healthy, self-sustaining stands of wild rice almost continuously from its headwaters for approximately 40 river miles downstream, where high-sulfate tributary discharges or direct discharges to the mainstem of the river from existing and historic taconite mine features have led to diminished or extinct populations of wild rice. Sulfate concentrations consistently exceed the wild rice criterion all the way downstream to the estuary. While it is uncertain as to whether wild rice grew historically in the river reaches between the mining-impacted section and the steep-gradient reach that ultimately flows into the estuary, it is common knowledge that wild rice flourished in the 12,000-acre estuary well into the 20th century. The St. Louis River estuary (Spirit Island, specifically) was the sixth stopping place in the Ojibwe migration story, one of the places where the migration prophecies were fulfilled (the place where "food grows upon the water"). Remnant stands remain today in the estuary, and St. Louis River Area of Concern (AOC) restoration objectives specifically include establishing substantial acreage of sustainable wild rice. Federal, state, and tribal agencies are actively working to restore wild rice in suitable habitat throughout the estuary, but are having limited success due to multiple factors, including sulfate concentrations consistently above the wild rice criterion. Several reaches of the St. Louis River within the estuary have sufficient data to support listing on the 2020 wild rice impaired waters list, and other reaches would likely meet assessment thresholds for listing in the next biennial list with targeted monitoring.

D. 40 other wild rice waters are likely impaired, but further assessment is required before listing.

The 40 wild rice waters in this table appear to be sulfate impaired, but there simply are not enough samples collected to reasonably make the determination. These waters must be monitored and assessed for the next 303(d) listing cycle. The Tribes jointly ask EPA to direct MPCA to conduct field testing or to otherwise ensure that sufficient field data for assessment is collected.

E. There are at least 10 additional, potentially impaired wild rice waters, but again, further assessment is required.

Tribes identified 10 other waters where there are no recent samples collected for verification. These waters must also be monitored to determine if listing on the next impaired waters list is appropriate. The Tribes likewise ask EPA to require field testing for these waters.

III. Response to Recent MPCA statements

The Tribes have already provided to EPA the record of comments and analysis as provided to MPCA over the course of the past decade, explaining why MPCA's review of the legal requirements related to listing was incorrect. EPA already did the same thing in 2016. On June 28, 2016, EPA stated that the 2015 Session Law and other provisions upon which MPCA still appears to rely today did not comply with the Clean Water Act and that if MPCA continued to uphold the rule, the agency could lose its NPDES permitting authority:

> On May 31, 2016 the Governor of Minnesota signed a measure entitled, "Sulfate Effluent Compliance," Laws of Minnesota 2016, Chapter 165, Section I (see enclosure). This legislation appears to invalidate water quality based effluent limits and compliance schedules for sulfate that were included in certain NPDES permits issued by the MPCA. Thus, this legislation appears to be a legislative action that strikes down or limits MPCA's authority under its approved NPDES program. Pursuant to 40 C.F.R. 123.63 (a)(ii), such an action may constitute grounds for EPA's determination that the MPCA's legal authority no longer meets the requirements of a federally approved program. Additionally, this legislative action could be construed as a de facto major modification to affected permits, which would necessitate the process, including public review, specified in 40 C.F.R. §322.62.[2]

MPCA claimed to have no assessment methodology for wild rice waters, and that MN Session laws prevented the state from adding wild rice waters to the impaired waters list. Yet, the MPCA has continued to assess waters wholly within Reservation boundaries for impairment status without Tribal input despite multiple objections and requests from Tribal staff. States do not have the jurisdictional authority over waters wholly within Reservation boundaries and should only participate in their assessment at the behest of Tribes, in the spirit of cooperation between the state and the sovereign Tribal Nation(s). In fact, the assessment of shared jurisdictional waters should also be accomplished through a collaborative effort. However, the state of Minnesota has been inconsistent in their efforts to engage Tribes in that regard.

IV. Conclusion

Sufficient data has been compiled to demonstrate long-term impairments in nineteen additional wild rice waters that should be added to the EPA's 2020 List. Approximately forty additional waters are likely impaired but further monitoring and assessment is required prior to listing. At least ten additional waters are potentially impaired but no recent samples have been collected for verification. Tribes respectfully request that MPCA be required to do additional monitoring and assessment of these fifty waters prior to the next 303(d) listing cycle.

In closing, the Minnesota tribes are grateful that EPA Region 5 is exercising its oversight authorities under the CWA to ensure that our irreplaceable psin/manoomin is fully protected. We look forward to continued collaboration with our federal partner to take the next steps after listing: restoration of the water quality needed to sustain wild rice for future generations.

Addressing the listing of impaired wild rice waters is an environmental justice issue that tribes, with our distinct socio-political status, have raised with MPCA and EPA. Through immediate action in protection and restoration efforts, the EPA as a federal agency can ensure this spiritual food and critical resource is available to our tribal members into perpetuity. In so doing, the agency follows its trust responsibility inherently guaranteed by treaties with our sovereign tribal nations.

---

[2] Letter of Tinka Hyde, EPA Water Division Director, to MPCA Asst. Comm'r Rebecca Flood (June 28, 2016).

Sincerely,

See attached Tribal Leader signature pages

c: Gov. Tim Walz (by email only, c/o Patina Park)
Lt. Gov. Peggy Flanagan (by email only, c/o Patina Park)
Patina Park, Tribal State Relations Systems Implementation (by email only: patina.park@state.mn.us)
Laura Bishop, MPCA Commissioner (by email only, Laura.Bishop@state.mn.us)
Katrina Kessler, MPCA (by email only: katrina.kessler@state.mn.us)
Helen Waquiu, MPCA (by email only: helen.waquiu@state.mn.us)
Catherine Neuschler, MPCA (by email only: catherine.neuschler@state.mn.us)
Barbara Wester, US EPA Region 5, Office of Regional Counsel (by email only: wester.barbara@epa.gov)
Tera Fong, US EPA Region 5, Water Division Director (by email only: Fong.Tera@epa.gov)
Alan Walts, US EPA Region 5, Office of International and Tribal Affairs (by email only: walts.alan@epa.gov)
Sarah Strommen, MnDNR Commissioner (by email only: commissioner.dnr@state.mn.us)
Bradley Harringon, MnDNR (by email only: Bradley.Harrington@state.mn.us)

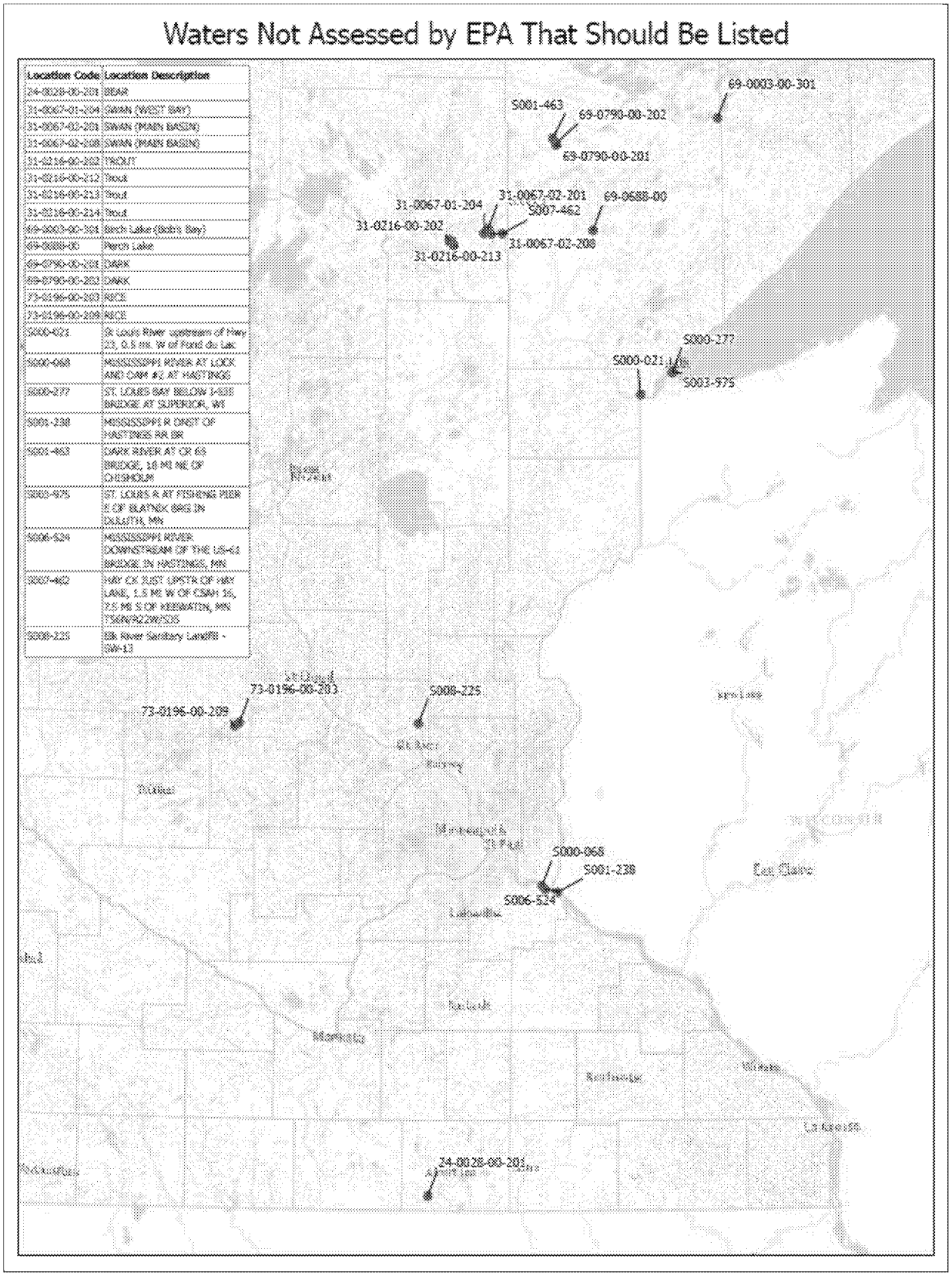
Appendix 1

A. Waters not assessed by EPA that should be listed on the 2020 List

19 additional waterbodies or waterbody segments should be added to the draft EPA 303(d) list that were not assessed (because they were not included in the 1,300 waters identified solely by MPCA as wild rice waters in 2017). Approximately 54 waters or segments need additional data collected to determine impairment status.

	Location Code	Max. PPM	Min. PPM	Med. PPM	Avg. PPM	Sample Count	Min. Date	Max. Date	Equis all stations Loc. Descr.	Equis all stations Type	Equis all stations County	Equis all stations Longitude	Equis all stations Latitude
1.	S006-524	98.8	36.1	65.7	67.7	9	4/28/2011	10/17/2017	Mississippi River downstream of the US-61 bridge in Hastings, MN	River/Stream	Dakota	-92.850643	44.746693
2.	S007-462	84	42	52	56.7	6	6/23/2009	8/25/2009	Hay Ck just upstr of Hay Lake, 1.5 mi W of CSAH 16, 7.5 mi S of Keewatin, MN T56N/R22W/S35	River/Stream	Itasca	-93.097973	47.289335
3.	S000-068	126	24	49.5	56.4	62	9/16/1971	2/16/2016	Mississippi River at lock and dam #2 at Hastings	River/Stream	Dakota	-92.86803	44.76074
4.	S001-238	92.4	6.33	41	44.8	5	6/3/2008	5/14/2009	Mississippi R dnst of Hastings RR BR	River/Stream	Dakota	-92.781028	44.735
5.	73-0196-00-209	36.2	32.7	33.5	34.2	5	5/25/2017	9/19/2017	Rice	Lake	Stearns	-94.622011	45.368981
6.	73-0196-00-203	36.6	33	33.2	34.1	5	5/25/2017	9/19/2017	Rice	Lake	Stearns	-94.596334	45.382602
7.	31-0067-01-204	51	23	31.5	34	6	6/24/2009	8/25/2009	Swan (West Bay)	Lake	Itasca	-93.206603	47.290313
8.	24-0028-00-201	42.4	24.9	31.2	33.5	6	5/13/2015	9/15/2016	Bear	Lake	Freeborn	-93.503406	43.555263
9.	31-0067-02-208	75	22	25	29.5	64	6/23/2009	8/25/2009	Swan (Main Basin)	Lake	Itasca	-93.162339	47.288692
10.	S008-225	100	1	14.1	22.5	8	4/4/2005	10/22/2014	Elk River Sanitary Landfill - SW-13	River/Stream	Sherburne	-93.572771	45.388537
11.	31-0067-02-201	23.3	17.2	18.7	19.9	11	5/12/2015	9/23/2018	Swan (Main Basin)	Lake	Itasca	-93.1808	47.309027
12.	S000-021	47	1	13	14.4	344	9/22/1969	9/25/2019	St Louis River upstream of Hwy 23, 0.5 mi. W of Fond du Lac	River/Stream		-92.2866	46.6637
13.	S003-975	36	1	13	13.8	111	11/17/1987	1/25/2010	St. Louis R at fishing pier E of Blatnik Brg in Duluth, MN	River/Stream	St Louis	-92.1	46.75
14.	S000-277	35	3.6	13	13.7	128	12/7/1973	9/27/2010	St. Louis Bay below I-535 bridge at Superior, WI	River/Stream	St Louis	-92.09997	46.747955
15.	31-0216-00-202	44.5	37	41.3	41.3	10	9/16/1988	9/15/2015	Trout	Lake	Itasca	-93.408524	47.259567
16.	31-0216-00-214	41.6	30.4	39.3	38.5	25	06/27/2006	11/09/2006	Trout	Lake	Itasca	-93.410221	47.264196
17.	69-0688-00	120	61	74.3	82.4	4	07/2008	06/11/2014	Perch	Lake	St Louis	-92.560534	47.302412
18.	69-0790-00-201	180	173	175	176	5	06/11/2011	09/05/2013	Dark	Lake	St Louis	-92.77813	47.63879
19.	69-0003-00-301	53.9	18.2	41.8	35.4	7	05/11/2021	05/13/2021	Bob's Bay, Birch Lake	Lake	St Louis	-91.8127	47.72677

Appendix 1


Waters Not Assessed by EPA That Should Be Listed
Location Code | Location Description
24-0028-00-201 | BEAR
31-0067-01-204 | SWAN (WEST BAY)
31-0067-02-201 | SWAN (MAIN BASIN)
31-0067-02-208 | SWAN (MAIN BASIN)
31-0216-00-202 | TROUT
31-0216-00-212 | Trout
31-0216-00-213 | Trout
31-0216-00-214 | Trout
69-0003-00-301 | Birch Lake (Bob's Bay)
69-0688-00 | Perch Lake
69-0790-00-201 | DARK
69-0790-00-202 | DARK
73-0196-00-203 | RICE
73-0196-00-209 | RICE
S000-021 | St Louis River upstream of Hwy 23, 0.5 mi. W of Fond du Lac
S000-068 | MISSISSIPPI RIVER AT LOCK AND DAM #2 AT HASTINGS
S000-277 | ST. LOUIS BAY BELOW I-535 BRIDGE AT SUPERIOR, WI
S001-238 | MISSISSIPPI R DNST OF HASTINGS RR BR
S001-463 | DARK RIVER AT CR 63 BRIDGE, 18 MI NE OF CHISHOLM
S003-975 | ST. LOUIS R AT FISHING PIER E OF BLATNIK BRG IN DULUTH, MN
S006-524 | MISSISSIPPI RIVER DOWNSTREAM OF THE US-61 BRIDGE IN HASTINGS, MN
S007-462 | BAY OF JUST UPSTR OF HAY LAKE, 1.5 MI W OF CSAH 16, 7.5 MI S OF KEEWATIN, MN T56N/R22W/S35
S008-225 | Elk River Sanitary Landfill - SW-13
69-0003-00-301
S001-463
69-0790-00-202
69-0790-00-201
31-0067-01-204
31-0067-02-201
69-0688-00
S007-462
31-0216-00-202
31-0067-02-208
31-0216-00-213
S000-277
S000-021
S003-975
73-0196-00-203
73-0196-00-209
S008-225
S000-068
S001-238
S006-524
24-0028-00-201

Appendix 1

C. Birch Lake and the Kawishiwi River should also be listed in the 2020 List.

Contrary to MPCA's conclusions, Birch Lake and the Kawishiwi River must be included on the 2020 303(d) list. Data from the 1970s to 2021 demonstrate a long-term impairment of the wild rice waters. Average sulfate concentrations in the 1970's ranged from 13.3-16 mg/L. Lab analysis of samples from at least 29 locations, collected by the 1854 Treaty Authority and NE MN Friends of the Wilderness, show concentrations in Bob's Bay ranging from 18.2-53.9/mg/L sulfate, and Dunka Bay concentrations ranging from 13.1 to 31 mg/L sulfate.

Data Source	Location Code	Max. PPM	Min PPM	Median PPM	Avg. PPM	Sample Count	Min. Date	Max. Date	All stations loc desc	All stations stn type	All stations county	All stations longitude	All stations latitude
MPCA EQUIS	S000-107	16	16	16	16	1	9/23/1969	9/24/1970	Kawishiwi R. Garden Lake outlet	River/Stream	Lake	-91.7606	47.92861
MPCA EQUIS	69-0003-00-502	15	12	14	13.3	7	8/17/1976	4/27/1977	Birch	Lake	St Louis	-91.8004	47.74008
1854		18.3	18.3	18.3	18.3	1		8/12/2013	Dunka River	River/Stream			
1854		13.1	13.1	13.1	13.1	1		8/12/2013	Dunka Bay	Lake			
NMW	NNOK-001	<0.3	<0.3	<0.3	<0.3	1		8/12/2020	North Nokomis Creek	River/Stream		-91.756	47.7919
NMW	5039	<0.3	<0.3	<0.3	<0.3	1		8/12/2020	Keeley Creek @ mouth	River/Stream		-91.75	47.7669
NMW	204	6.8	6.8	6.8	6.8	1		8/12/2020	Birch Lake	Lake		-91.786	47.7519
NMW	204	6.8	6.8	6.8	6.8	1		8/12/2020	Birch Lake	Lake		-91.786	47.7519
NMW	501	5.4	5.4	5.4	5.4	1		8/12/2020	Birch Lake	Lake		-91.766	47.7828
NMW	5730	237	237	237	237	1		8/12/2020	Unnamed Creek (Bob Bay)	River/Stream		-91.814	47.7244
NMW	S000-108	4.3	4.3	4.3	4.3	1		8/12/2020	S Kawishiwi River @ Hwy 1	River/Stream		-91.784	47.8158
NMW	SNOK-DS	6	6	6	6	1		8/12/2020	South Nokomis Creek Downstream	River/Stream		-91.758	47.7825
NMW	303	21.4	21.4	21.4	21.4	1		5/11/2021	Birch Lake	Lake		-91.8745	47.71744
NMW	S009-182	15	15	15	15	1		5/11/2021	Dunka River	River/Stream		-91.8755	47.71972
NMW	202	11.8	11.8	11.8	11.8	1		5/11/2021	Birch Lake	Lake		-91.8824	47.72415
NMW	203	11.8	11.8	11.8	11.8	1		5/11/2021	Birch Lake	Lake		-91.8763	47.7246
NMW	503	12.4	12.4	12.4	12.4	1		5/11/2021	Birch Lake	Lake		-91.8714	47.73473
NMW	BB-001	53.9	53.9	53.9	53.9	1		5/11/2021	Bob Bay	Lake		-91.8127	47.72677
NMW	301	42	42	42	42	1		5/11/2021	Bob Bay	Lake		-91.8132	47.73225
NMW	301	41.8	41.8	41.8	41.8	1		5/11/2021	Bob Bay	Lake		-91.8132	47.73225
NMW	BB-002	19.1	19.1	19.1	19.1	1		5/11/2021	Bob Bay	Lake		-91.8111	47.73746
NMW	BB-002	18.2	18.2	18.2	18.2	1		5/11/2021	Bob Bay	Lake		-91.8111	47.73746
NMW	502	5.9	5.9	5.9	5.9	1		5/11/2021	Birch Lake	Lake		-91.8	47.7401

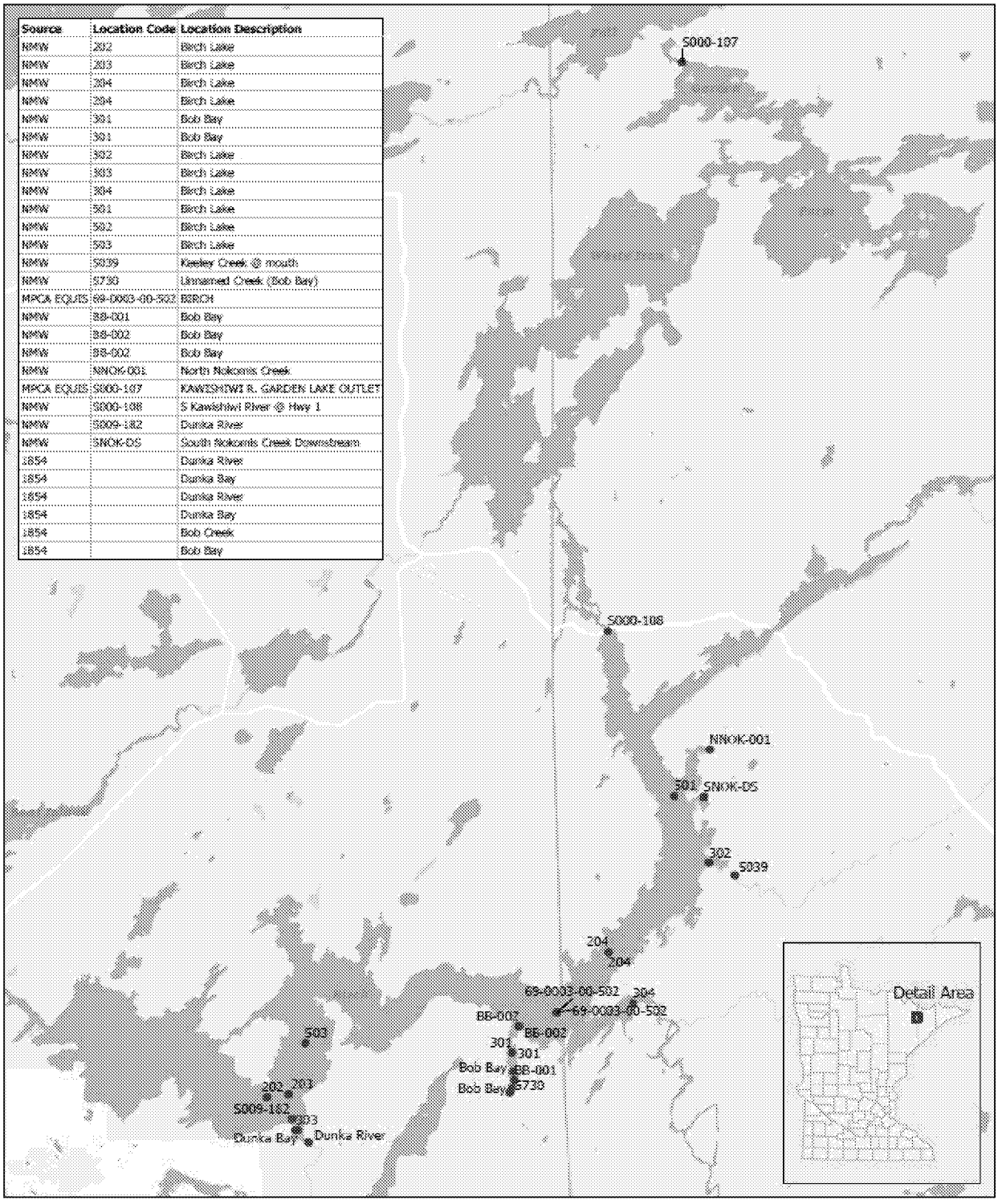
Appendix 1

NMW	304	0.8	0.8	0.8	0.8	1	5/11/2021	Birch Lake	Lake	-91.7788	47.7416
NMW	302	5.6	5.6	5.6	5.6	1	5/11/2021	Birch Lake	Lake	-91.7567	47.7694
1854		32.3	32.3	32.3	32.3	1	5/13/2021	Dunka River	River/Stream		
1854		21	21	21	21	1	5/13/2021	Dunka Bay	Lake		
1854		194	194	194	194	1	5/13/2021	Bob Creek	River/Stream		
1854		53.2	53.2	53.2	53.2	1	5/13/2021	Bob Bay	Lake		

Appendix 1

Birch Lake/Kawishiwi River Monitoring Locations

Source	Location Code	Location Description
NMW	202	Birch Lake
NMW	203	Birch Lake
NMW	204	Birch Lake
NMW	204	Birch Lake
NMW	301	Bob Bay
NMW	301	Bob Bay
NMW	302	Birch Lake
NMW	303	Birch Lake
NMW	304	Birch Lake
NMW	501	Birch Lake
NMW	502	Birch Lake
NMW	503	Birch Lake
NMW	5039	Keeley Creek @ mouth
NMW	5730	Unnamed Creek (Bob Bay)
MPCA EQUIS	69-0003-00-502	BIRCH
NMW	BB-001	Bob Bay
NMW	BB-002	Bob Bay
NMW	BB-002	Bob Bay
NMW	NNOK-001	North Nokomis Creek
MPCA EQUIS	S000-107	KAWISHIWI R. GARDEN LAKE OUTLET
NMW	S000-108	S Kawishiwi River @ Hwy 1
NMW	S009-182	Dunka River
NMW	SNOK-DS	South Nokomis Creek Downstream
1854		Dunka River
1854		Dunka Bay
1854		Dunka River
1854		Dunka Bay
1854		Bob Creek
1854		Bob Bay



Appendix 1

	Location Code	Max. PPM	Min. PPM	Med. PPM	Avg. PPM	Sample Count	Min. Date	Max. Date	Equis all stations Loc. Descr.	Equis all stations Type	Equis all stations County	Equis all stations Longitude	Equis all stations Latitude
1	16-2001-00-N001	11	9.8	10.5	10.5	4	9/25/1974	10/25/1974	Superior	Great Lake	St Louis	-92.0892	46.76389
2	16-2001-00-N002	14	11	12	12.3	3	9/26/1974	5/14/1975	Superior	Great Lake	St Louis	-92.0819	46.75444
3	16-2001-00-N003	18	14	17	16.3	3	9/26/1974	5/14/1975	Superior	Great Lake	St Louis	-92.0522	46.72667
4	16-2001-00-N004	20	11	16	16.6	5	9/26/1974	5/14/1975	Superior	Great Lake	St Louis	-92.0294	46.70972
5	S000-021	47	1	13	14.4	344	9/22/1969	9/25/2019	St Louis River upstream of Hwy 23, 0.5 mi. W of Fond du Lac	River/Stream	Peren	-92.2866	46.6637
6	S000-262	42	1	12	13.2	240	4/4/1973	11/20/1996	St Louis R. SH-39 at Duluth	River/Stream	St Louis	-92.2019	46.65669
7	S000-277	35	3.6	13	13.7	128	12/7/1973	9/27/2010	St. Louis Bay below I-535 bridge at Superior, WI	River/Stream	St Louis	-92.1	46.74796
8	S003-972	47	1	12	13.0	204	6/26/1973	11/20/1996	St. Louis R. Fond du Lac reservoir at dam, 3.3 Mi W Gary, MN	River/Stream	St Louis	-92.2958	46.66639
9	S003-975	36	1	13	13.8	111	11/17/1987	1/25/2010	St. Louis R. at fishing pier e of Blatnik brg in Duluth, MN	River/Stream	St Louis	-92.1	46.75
10	S003-984	29	6	13	13.8	161	4/4/1973	10/7/1987	St. Louis R. at brg in N channel, 1 mi SE of Duluth, MN	River/Stream	St Louis	-92.1068	46.75206
11	S003-985	34	6	12	13.8	106	6/6/1973	10/16/1984	St. Louis R. at Arrowhead bridge, 0.7 mi SE of Duluth, MN	River/Stream	St Louis	-92.1503	46.72046
12	S007-206	16	16	16	16.0	1	9/5/2012	9/5/2012	St. Louis R. at Nekuk Island, 1 mi E of Hwy 23 in Fond du Lac, MN	River/Stream Peren	St Louis	-92.2739	46.65449
13	S007-512	13.1	13.1	13.1	13.1	1	8/17/2009	8/17/2009	St. Louis R. E of Mud Lake and E McCuen ST / SH-39 near Duluth in WI	River/Stream Peren	St Louis	-92.2149	46.663
14	S007-515	20.8	20.8	20.8	20.8	1	8/17/2009	8/17/2009	St. Louis R., N of Mc Cuen ST / SH-39 near Duluth, MN	River/Stream Peren	St Louis	-92.2042	46.66506

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15	S007-516	13.2	13.2	13.2	13.2	1	8/17/2009	8/17/2009	St. Louis R. AT Fond du Lac Rd near Duluth in WI	River/Stream Peren	St Louis	-92.2538	46.65563
16	S007-537	16.7	16.7	16.7	16.7	1	8/10/2012	8/10/2012	Partridge R, 2/3 mi E of CSAH-100, 1 3/4 mi S of Aurora, MN	River/Stream Peren	St Louis	-92.2215	47.49881
17	S005-751	48.3	2.3	39	27.0	48	5/6/2009	9/3/2020					
18	09-0001-00-101	23.6	6	13.4	13.4	13	10/7/2010	10/13/2014	Thomson Reservoir	Lake	Carlton	-92.3992	46.66825
19	69-0653-00-202	21.5	21.5	21.5	21.5	1	7/24/2012	7/24/2012	Long	Lake	St Louis	-92.543	47.40333
20	S000-023	53	6	12	13.5	73	9/23/1969	9/20/2010	St. Louis R Bridge on US-2, 2 mi SE of Brookston	River/Stream	St Louis	-92.5761	46.84944
21	S000-046	76	0.11	12	13.8	212	6/4/1974	9/23/2009	St. Louis R. old USH-61 at Scanlon	River/Stream	Carlton	-92.4196	46.69992
22	S000-119	164	2.84	44.5	47.7	51	10/16/2007	10/14/2013	St. Louis R Bridge at CSAH-7, 0.5 mi S of Forbes, MN	River/Stream Peren	St Louis	-92.5988	47.36269
23	S000-285	65	14	34.5	35.0	32	5/16/1974	7/12/1977	St. Louis R. CSAH-27 W of Zim	River/Stream	St Louis	-92.6599	47.30528
24	S000-629	38	1	12	12.7	238	2/5/1974	11/20/1996	St. Louis R 0.5 MI E of Scanlon at Scanlon dam	River/Stream	Carlton	-92.417	46.70861
25	S002-598	180	13	100	90.2	13	9/3/1976	8/10/2012	St. Louis R on CSAH-100 2 MI S of Aurora	River/Stream	St Louis	-92.2382	47.4926
26	S003-970	22	8	14	14.5	28	1/20/1976	11/8/1978	St. Louis R AT R.R. crossing in Cloquet, MN	River/Stream	Carlton	-92.4589	46.72583
27	S003-971	41	1	12	12.0	224	2/5/1974	11/20/1996	St. Louis R at SH-33 brg in Cloquet, MN	River/Stream	Carlton	-92.4639	46.72778
28	S003-973	41	1	11	11.5	212	2/5/1974	10/15/2013	St. Louis R at Dunlap BRG in Cloquet, MN	River/Stream	Carlton	-92.4636	46.72528
29	S003-974	70	1	16	17.5	209	6/4/1974	11/20/1996	St. Louis R at CSAH 31 in Brookston, MN	River/Stream	St Louis	-92.6028	46.86972
30	S003-982	22	7	13	13.6	18	6/13/1973	10/4/1978	St. Louis R at Oldenburg Point, 2.3 mi SE of Thomson, MN	River/Stream	Carlton	-92.3531	46.65322
31	S004-601	212	38.636	71	75.3	32	5/6/2009	10/16/2013	West Two R at CR-661 (Fraser Rd), 3 mi. S of Cherry, MN	River/Stream Peren	St Louis	-92.683	47.33885
32	S005-089	26	5.7	14.8	14.4	19	8/7/2008	10/9/2017	St. Louis R at CSAH-61 BRG, just E of Scanlon	River/Stream	Carlton	-92.4176	46.70403
33	S005-303	57.7	18	31.7	34.5	17	5/20/2009	7/29/2013	St. Louis R at CSAH-8 BRG just outside of Floodwood, MN	River/Stream	St Louis	-92.9045	46.929
34	S005-770	63.7	2.82	23	28.9	34	5/6/2009	2/26/2014	Swan R at CR-750, 4 mI SE of Little Swan	River/Stream	St Louis	-92.8018	47.23967

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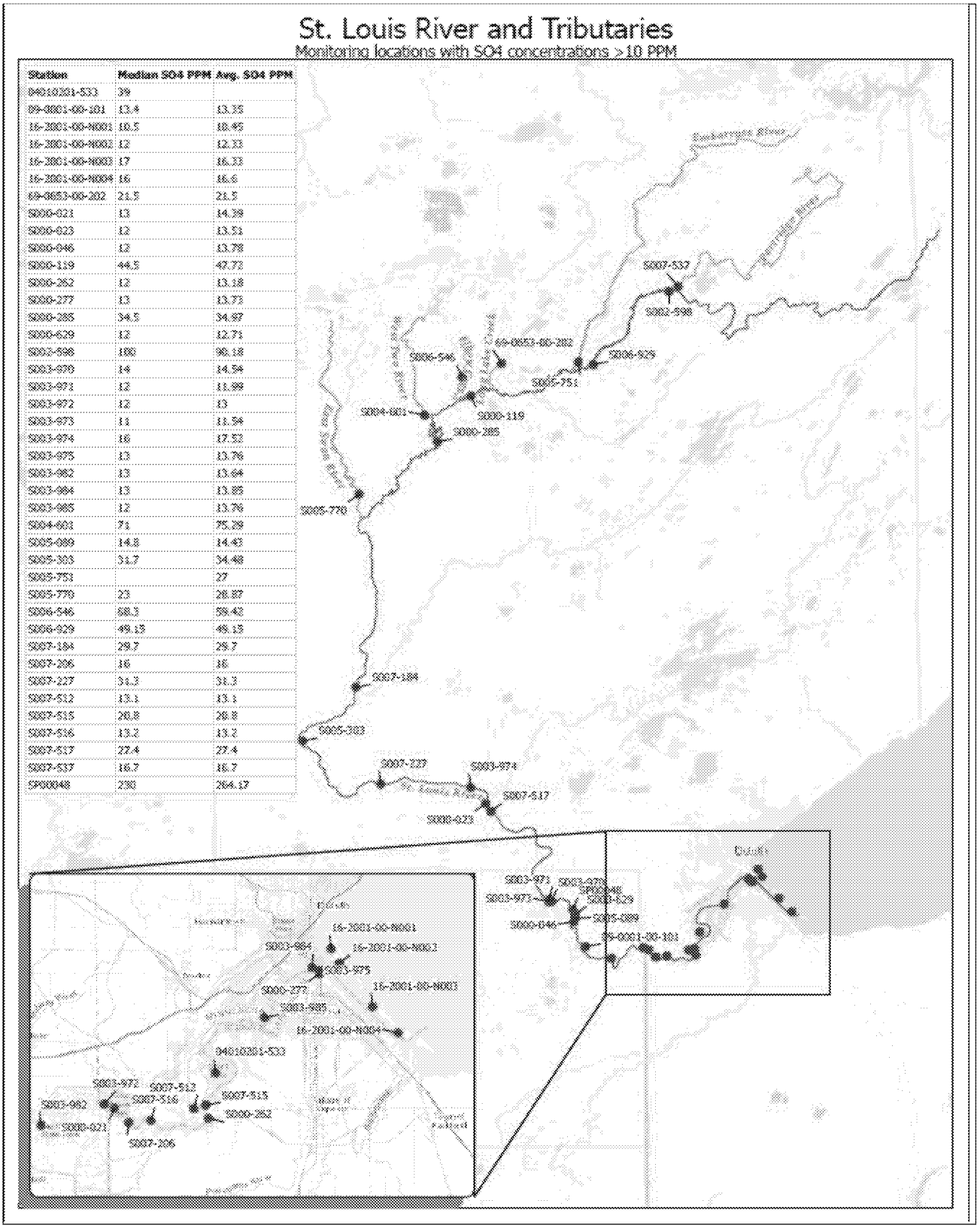
35	S006-546	109	12.8	68.3	59.4	9	4/13/2011	2/5/2014	Elbow Ck at CR-310 / Keenan Rd, 0.5 mi NW of Keenan, MN.	River/Stream	St Louis	-92.6147	47.38636
36	S006-929	73.8	24.5	49.15	49.2	2	9/1/2011	9/7/2012	St. Louis R upstrm of CSAH-95, 8.5 mi SE of Eveleth, MN	River/Stream Peren	St Louis	-92.3767	47.40128
37	S007-184	29.7	29.7	29.7	29.7	1	7/29/2013	7/29/2013	St. Louis R AT CSAH-6, 7 mi NE of Floodwood, MN	River/Stream Peren	St Louis	-92.8085	46.99653
38	S007-227	31.3	31.3	31.3	31.3	1	8/29/2012	8/29/2012	St. Louis R at Nygaard Rd (boat access at CR-844), 8 mi SE of Floodwood, MN	River/Stream Peren	St Louis	-92.7642	46.87446
39	S007-517	27.4	27.4	27.4	27.4	1	8/18/2009	8/18/2009	St. Louis R just S of US-2, 2 mi SE of Brookston, MN	River/Stream Peren	St Louis	-92.567	46.83921
40	SP00048	590	102	230	264.2	18	5/2/2001	4/6/2015	SW-209-SR-001	Spring	Carlton	-92.4214	46.71506

Appendix 1

St. Louis River and Tributaries

Monitoring locations with SO4 concentrations >10 PPM

Station	Median SO4 PPM	Avg. SO4 PPM
04010301-533	39	
09-3801-00-101	13.4	13.35
16-3801-00-N001	10.5	10.45
16-3801-00-N002	12	12.33
16-3801-00-N003	17	16.33
16-3801-00-N004	16	16.6
69-0853-00-202	21.5	21.5
S000-021	13	14.28
S000-023	12	13.51
S000-046	12	13.78
S000-119	44.5	47.72
S000-262	12	13.18
S000-277	13	13.73
S000-285	34.5	34.97
S000-629	12	12.71
S002-598	100	90.18
S003-970	14	14.54
S003-971	12	11.88
S003-972	12	13
S003-973	11	11.54
S003-974	16	17.52
S003-975	13	13.76
S003-982	13	13.64
S003-984	13	13.85
S003-985	12	13.76
S004-601	71	75.29
S005-089	14.8	14.43
S005-303	31.7	34.48
S005-751		27
S005-770	23	28.87
S006-546	58.3	59.42
S006-929	49.15	48.15
S007-184	29.7	29.7
S007-206	16	16
S007-227	31.3	31.3
S007-512	13.1	13.1
S007-515	26.8	26.8
S007-516	13.2	13.2
S007-517	27.4	27.4
S007-537	16.7	16.7
SPW0048	230	264.17



Appendix 1

D. Likely impaired wild rice waters (further assessment required)

The 40 waters in this table appear to be sulfate impaired, but there haven't been enough samples collected to reasonably make the determination. These waters must be monitored and assessed for the next 303(d) listing cycle.

	Location Code	Max PPM	Min PPM	Median PPM	Avg PPM	Sample Count	Min Date	Max Date	equis all stations loc desc	equis all stations stn type	equis all stations county	equis all stations longitude	equis all stations latitude
1.	03-0411-00-201	85	85	85	85	1	8/21/2012	8/21/2012	Bean	Lake	Becker	-95.87056	46.93371
2.	03-0411-00-202	77.2	77.2	77.2	77.2	1	5/22/2012	5/22/2012	Bean	Lake	Becker	-95.873284	46.935038
3.	14-0103-00-203	48.5	48.5	48.5	48.5	1	9/6/2017	9/6/2017	Cromwell	Lake	Clay	-96.315636	46.964324
4.	14-0103-00-201	41.2	41.2	41.2	41.2	1	8/22/2012	8/22/2012	Cromwell	Lake	Clay	-96.315636	46.9644
5.	S009-009	45	27.4	44.5	39.0	3	7/28/2016	9/28/2016	Mississippi River 3.3 mi E of Ravenna, MN (river mile 805)	River/Stream	Goodhue	-92.70337	44.695791
6.	69-0376-00-201	38.6	38.6	38.6	38.6	1	6/15/2011	6/15/2011	Whitewater	Lake	St Louis	-92.171361	47.504093
7.	18-0126-00-201	38.3	38.3	38.3	38.3	1	5/23/2012	5/23/2012	Mahnomen	Lake	Crow Wing	-94.008342	46.496209
8.	S003-897	56.1	26.7	29.8	37.5	3	7/27/2016	9/28/2016	Mississippi River 1.1 mi upst of confluence, 1.3 mi NE of Hastings, MN	River/Stream	Dakota	-92.825297	44.750427
9.	S008-999	55.5	26.8	29.7	37.3	3	7/27/2016	9/28/2016	Mississippi River 2.2 mi NE of Hastings, MN (river mile 812)	River/Stream Peren	Washington	-92.816173	44.748868
10.	14-0103-00-202	37.3	37.3	37.3	37.3	1	6/7/2012	6/7/2012	Cromwell	Lake	Clay	-96.315788	46.96142
11.	S008-996	44.6	26.8	37.3	36.2	3	7/28/2016	9/28/2016	Mississippi River 3.4 mi E of Welch, MN (river mile 801)	River/Stream Peren	Goodhue	-92.642098	44.652178
12.	S008-997	45.9	24.7	34.7	35.1	3	7/28/2016	9/28/2016	Mississippi River 7 mi	River/Stream Peren	Goodhue	-92.680192	44.676976

Appendix 1

									NE of Red Wing, MN (river mile 805)				
13.	S008-998	41.5	27.1	35	34.5	3	7/28/2016	9/28/2016	Mississippi River S of Truedale Slough, 5.2 mi E of Hastings, MN (river mile 808)	River/Stream Peren	Dakota	-92.749409	44.72215
14.	72-0042-00-201	31	31	31	31	1	5/13/2014	5/13/2014	Titlow	Lake	Sibley	-94.206212	44.568683
15.	73-0196-00-215	27.9	27.9	27.9	27.9	1	5/24/2012	5/24/2012	Rice	Lake	Stearns	-94.633418	45.383019
16.	86-0282-00-100	25	25	25	25	1	7/25/1976	7/25/1976	Louisa	Lake	Wright	-94.2503	45.3086
17.	66-0048-00-204	22.4	22.4	22.4	22.4	1	5/25/2012	5/25/2012	Rice	Lake	Rice	-93.497648	44.331809
18.	66-0047-00-209	22	22	22	22	1	5/25/2012	5/25/2012	Hunt	Lake	Rice	-93.441164	44.336994
19.	69-0653-00-202	21.5	21.5	21.5	21.5	1	7/24/2012	7/24/2012	Long	Lake	St Louis	-92.543032	47.403334
20.	S007-515	20.8	20.8	20.8	20.8	1	8/17/2009	8/17/2009	St Louis R, N of Mc Cuen St / SH-39 near Duluth, MN	River/Stream Peren	St Louis	-92.204154	46.665057
21.	18-0126-02-201	21.1	16.9	19	19	2	9/17/2012	9/11/2013	Middle Mahnomen	Lake	Crow Wing	-93.99583	46.49849
22.	69-0573-00-201	18.9	18.9	18.9	18.9	1	8/18/2009	8/18/2009	Fourth	Lake	St Louis	-92.356367	47.478793
23.	24-0028-00-206	18.3	18.3	18.3	18.3	1	7/25/2012	7/25/2012	Bear	Lake	Freeborn	-93.50282	43.54652
24.	69-0376-00-101	18	18	18	18	1	10/21/1985	10/21/1985	Whitewater	Lake	St Louis	-92.170187	47.515153
25.	66-0047-00-208	17.1	17.1	17.1	17.1	1	7/27/2012	7/27/2012	Hunt	Lake	Rice	-93.44428	44.32748
26.	69-0496-00-201	16.6	16.6	16.6	16.6	1	6/15/2011	6/15/2011	Embarrass	Lake	St Louis	-92.323276	47.529806
27.	S007-511	30.9	2.22	16.6	16.6	2	8/16/2010	8/8/2012	Pike R. just upstr of Rice L. .4 mi W of Pike River Dr., 2.5 mi NW of Biwabik, MN	River/Stream Peren	St Louis	-92.373686	47.566645

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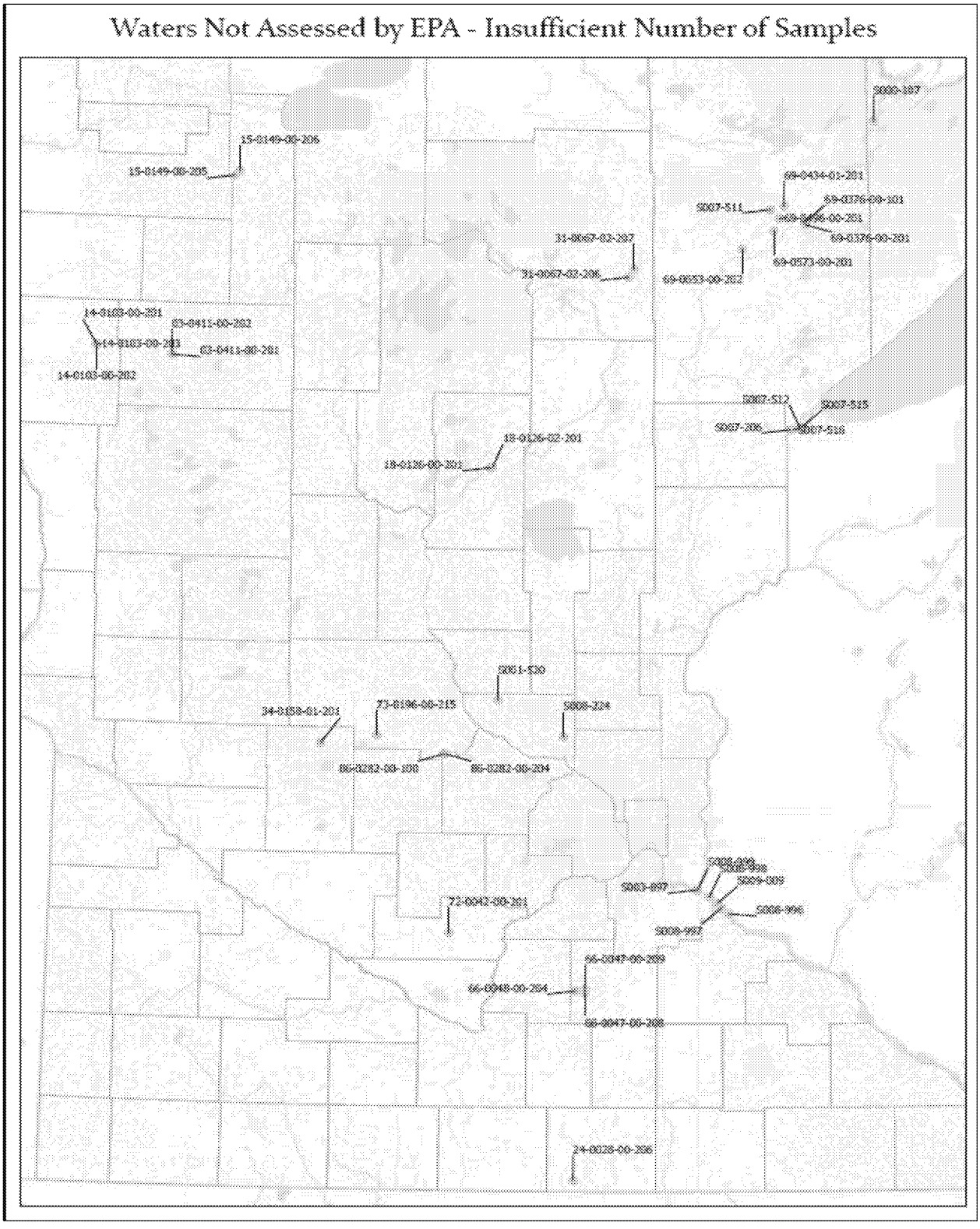
28.	34-0158-01-201	16.5	16.5	16.5	16.5	1	9/20/2011	9/20/2011	Lake Monongalia - main basin	Lake	Kandiyohi	-94.94984	45.34706
29.	31-0067-02-207	16.5	16.5	16.5	16.5	1	5/21/2012	5/21/2012	Swan (main basin)	Lake	Itasca	-93.179126	47.322257
30.	S008-224	29	1	17.75	16.4	4	4/4/2005	7/12/2011	Elk River Sanitary Landfill - SW-10	River/Stream	Sherburne	-93.574508	45.383371
31.	S000-107	16	16	16	16	1	9/23/1969	9/24/1970	Kawishiwi R. Garden Lake outlet	River/Stream	Lake	-91.760556	47.928611
32.	S007-206	16	16	16	16	1	9/5/2012	9/5/2012	St Louis R at Nekuk Island, 1 mi E of Hwy 23 in Fond du Lac, MN	River/Stream Peren	St Louis	-92.27386	46.65449
33.	15-0149-00-205	14.7	14.7	14.7	14.7	1	8/28/2012	8/28/2012	Pine	Lake	Clearwater	-95.54141	47.68412
34.	86-0282-00-204	16.8	7.5	15.25	13.7	4	5/31/2019	10/8/2019	Louisa	Lake	Wright	-94.243701	45.308701
35.	15-0149-00-206	13.4	13.4	13.4	13.4	1	5/24/2012	5/24/2012	Pine	Lake	Clearwater	-95.512524	47.703891
36.	69-0434-01-201	13.3	13.3	13.3	13.3	1	8/16/2012	8/16/2012	Sabin	Lake	St Louis	-92.293532	47.581232
37.	31-0067-02-206	14	12.5	13.2	13.2	2	8/30/2012	8/30/2012	Swan (main basin)	Lake	Itasca	-93.21268	47.28875
38.	S007-516	13.2	13.2	13.2	13.2	1	8/17/2009	8/17/2009	St Louis R at Fond du Lac Rd near Duluth in WI	River/Stream Peren	St Louis	-92.253798	46.655632
39.	S007-512	13.1	13.1	13.1	13.1	1	8/17/2009	8/17/2009	St Louis R E of Mud Lake and E Mc Cuen ST / SH-39 near Duluth in WI	River/Stream Peren	St Louis	-92.214877	46.663001
40.	S001-520	12.7	12.7	12.7	12.7	1	6/27/2019	6/27/2019	Rice ck at CSAH-6 brg, 6.5 mi NE of Clear Lake	River/Stream	Sherburne	-93.946111	45.5335

Appendix 1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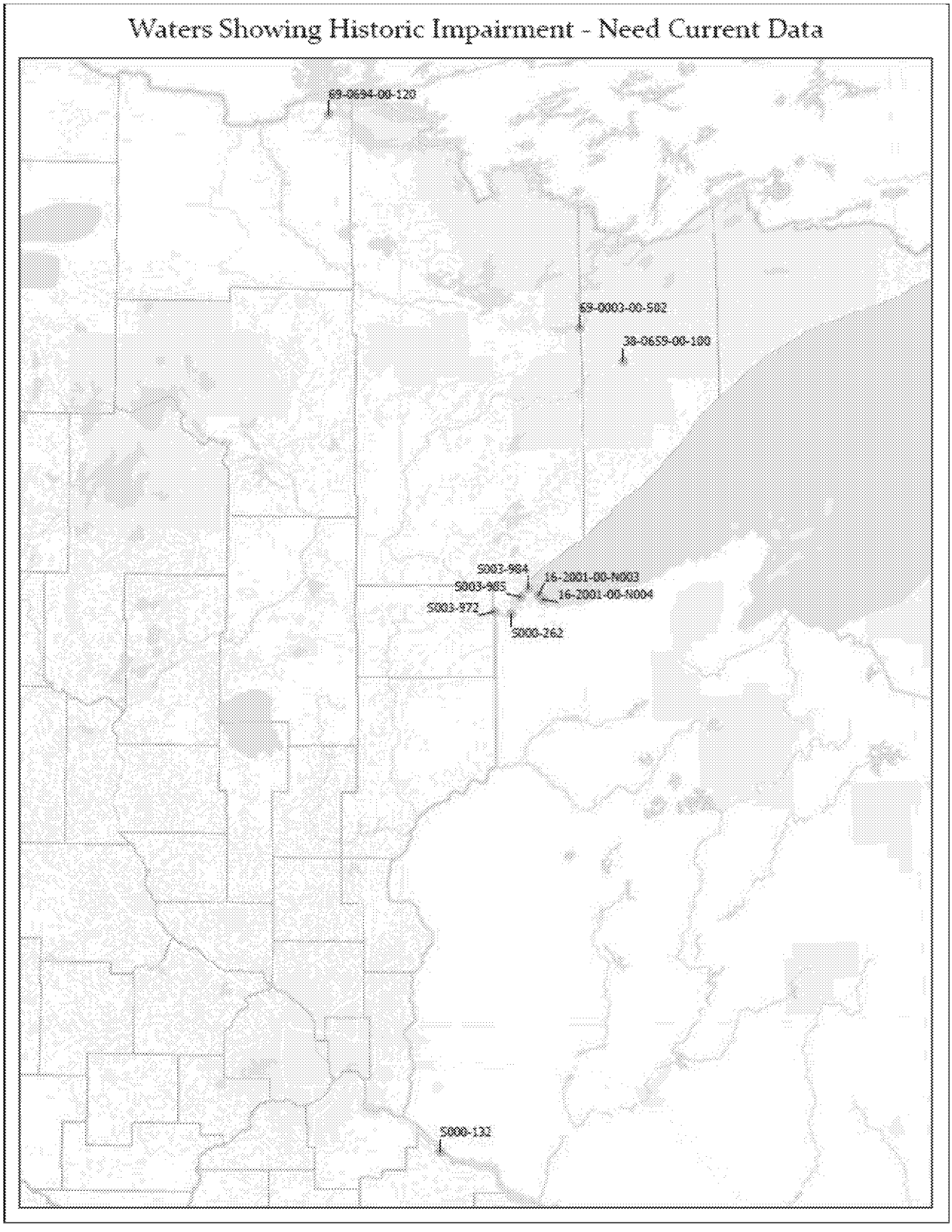
Appendix 1

D. Additional, potentially impaired wild rice waters (further assessment required)

The data shown below suggests sulfate impairment of these 10 waters, but no recent samples have been collected for verification. These waters must also be monitored to determine if listing on the next impaired waters list is appropriate.

	Location Code	Max. PPM	Min. PPM	Med. PPM	Avg. PPM	Sample Count	Min Date	Max Date	equis all stations loc desc	equis all stations stn type	equis all stations county	equis all stations longitude	equis all stations latitude
1.	S003-984	29	6	13	13.8	161	4/4/1973	10/7/1987	St. Louis R at brg in N channel, 1 mi SE of Duluth, MN	River/Stream	St Louis	-92.106766	46.752055
2.	S003-985	34	6	12	13.8	106	6/6/1973	10/16/1984	St. Louis R at Arrowhead bridge, 0.7 mi SE of Duluth, MN	River/Stream	St Louis	-92.15025	46.720456
3.	S000-132	43	24	27.5	29.7	8	7/6/1976	3/1/1977	Mississippi R lock & dam #3, 5 mi NW of Red Wing	River/Stream	Goodhue	-92.610222	44.612028
4.	16-2001-00-N004	20	11	16	16.6	5	9/26/1974	5/14/1975	Superior	Great Lake	St Louis	-92.029444	46.709722
5.	16-2001-00-N003	18	14	17	16.3	3	9/26/1974	5/14/1975	Superior	Great Lake	St Louis	-92.052222	46.726667
6.	38-0659-00-100	14	14	14	14.0	1	10/15/1976	10/15/1976	South McDougal	Lake	Lake	-91.5587	47.6112
7.	69-0003-00-502	15	12	14	13.3	7	8/17/1976	4/27/1977	Birch	Lake	St Louis	-91.800436	47.740078
8.	S000-262	42	1	12	13.2	240	4/4/1973	11/20/1996	St. Louis R . SH-39 at Duluth	River/Stream	St Louis	-92.201889	46.656694
9.	S003-972	47	1	12	13.0	204	6/26/1973	11/20/1996	St. Louis R Fond du Lac reservoir at dam, 3.3 mi W Gary, MN	River/Stream	St Louis	-92.295833	46.666389
10.	69-0694-00-120	16	6	16	12.7	3	1/10/1974	10/24/1974	Rainy	Lake	St Louis	-93.221274	48.559405

Appendix 1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38-0659-00-100
S003-984
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S003-972
16-2001-00-N003
16-2001-00-N004
S000-262
S000-132

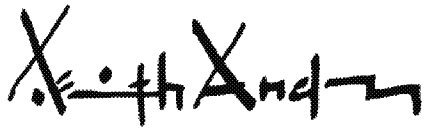
Cathy Chavers
Chairwoman
Bois Forte Band of Chippewa

Kevin Dupuis
Chairperson
Fond du Lac Band of Lake Superior Chippewa

Robert F. Deschampe
Chairman
Grand Portage Band of Lake Superior Chippewa

Faron Jackson, Sr.
Chairman
Leech Lake Band of Ojibwe

Robert Larsen
President
Lower Sioux Indian Community



6/25/21

Keith B. Anderson
Chairman
Shakopee Mdewakanton Sioux Community

Melanie Benjamin

Melanie Benjamin
Chief Executive
Mille Lacs Band of Ojibwe

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Executive Director
Minnesota Chippewa Tribe

Shelley Buck
President
Prairie Island Indian Community

Darrell G. Seki, Sr.
Tribal Chairman
Red Lake Band of Chippewa Indians

Michael Fairbanks
Chairman
White Earth Band of the Minnesota Chippewa Tribe

Minnesota Center for
Environmental Advocacy

June 30, 2021

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VIA E-MAIL

RE: Minnesota Center for Environmental Advocacy's Comments on EPA's Additions to Minnesota's 2020 Impaired Waters List

Dear Mr. Proto,

Thank you for the opportunity to provide comments on the Environmental Protection Agency's ("EPA") Additions to Minnesota's 2020 Impaired Waters List. Minnesota Center for Environmental Advocacy ("MCEA")[1] strongly supports EPA's addition of 30 Water Quality Limited Segments used for the production of wild rice that are impaired for sulfate to Minnesota's list. This action—which is only the first step needed to provide real protection for this critical natural resource—is long overdue. The Minnesota Pollution Control Agency ("MPCA") has continually failed in its duty to protect wild rice, and as a result, wild rice production is threatened throughout the state. MCEA urges EPA not only to list the additional 30 waters it has identified, but also to work with affected Tribal Nations—which have been instrumental in working for protections for wild rice—to add more waters to this list. Because of the importance of this issue

[1] Minnesota Center for Environmental Advocacy ("MCEA") is a Minnesota non-profit organization whose mission is to use the law, science, and research to preserve and protect Minnesota's natural resources, its wildlife, and the health of its people. For over forty years, MCEA has worked with citizens and government decision-makers to protect and improve the quality of Minnesota's environment, including working to address threats to Minnesota's water quality.

to Tribal Nations, EPA should strive to reach consensus with affected Tribes on how to best secure protection of wild rice waters and take action accordingly.

A. Wild Rice Is An Important Minnesota Resource.

Natural wild rice holds more cultural and historic significance in Minnesota than anywhere else in the world.[2] It has been harvested for food in Minnesota for thousands of years, and currently no state has more acres of natural wild rice than Minnesota.[3] Wild rice provides food and habitat for fish, waterfowl, and other wildlife; it cleans water of excess nitrogen and phosphorus; and it provides important economic benefits for communities where it is grown and harvested.[4]

Most importantly, wild rice has a central place in the history and culture of many local Tribal Nations, including the Ojibwe and the Dakota. For the Ojibwe people, wild rice (or manoomin) has a special spiritual, cultural, and nutritional significance.[5] It constitutes both food and medicine, and it plays a critical role in Ojibwe history, sacred stories, and ceremonies.[6] Wild rice also remains a dietary staple, one of the first solid foods fed to infants, a special dish served at celebrations and funerals.[7] For the Dakota, wild rice (or psiŋ) also has deep roots in tribal history, as Dakota tribes have harvested it "since a time immemorial."[8] Wild rice is deeply embedded in

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[2] Minn. Dep't of Nat. Res., *Natural Wild Rice in Minnesota* 1 (2008) [hereinafter "Natural Wild Rice"], *available at* https://files.dnr.state.mn.us/fish_wildlife/wildlife/wildrice/natural-wild-rice-in-minnesota.pdf.
[3] *Id.* at 1, 7.
[4] *Id.* at 1,7, 9-11.
[5] *Id.* at 1; Fond du Lac Band of Lake Superior Chippewa, *Expanding the Narrative of Tribal Health: The Effects of Wild Rice Water Quality Rules Changes on Tribal Health* 9 (2018) [hereinafter "Tribal Health Study"], available at http://www.fdlrez.com/RM/downloads/WQSHIA.pdf
[6] Natural Wild Rice, *supra* note 2, at 5; Tribal Health Study, *supra* note 5, at 8.
[7] Tribal Health Study, *supra* note 5, at 17.
[8] Minn. Tribal Wild Rice Task Force, *2018 Tribal Wild Rice Task Force Report* 12-13 (2018) [hereinafter "Tribal Task Force"], *available at* https://mnchippewatribe.org/pdf/TWRTF.Report.2018.pdf.

Dakota culture, as shown by its use in ceremonies, gifts, and traditions passed down for generations.[9] Many tribes, both Ojibwe and Dakota, retain rights to harvest natural wild rice not only on reservation lands, but also on lands throughout Minnesota that were ceded through treaties.[10] Harvesting wild rice provides important direct and indirect economic benefits—worth millions of dollars—to Tribal members.[11] Any harm to remaining stands of wild rice also causes harm to Tribal members' health, economic, and sociocultural well-being.[12]

B. MPCA Has Failed To Protect Minnesota's Wild Rice.

Despite its importance and historical abundance in Minnesota, wild rice today faces many threats to its survival throughout the state. Historically, wild rice grew throughout the upper Midwest, but over the years its range has been dramatically diminished due to land use changes, climate change, and, particularly, pollution.[13] Today, natural wild rice grows abundantly only in north central and northeastern Minnesota, areas of northern Wisconsin, and small remnant stands in Michigan.[14] Wild rice's ideal habitat is clean, shallow bodies of water with some movement, such as rivers, streams, and lakes with inlets and outlets. [15] Changes to the bodies of water where it grows—including from contaminants from mining and other industries—can be devastating to wild rice stands.[16]

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[9] *Id.*
[10] Natural Wild Rice, *supra* note 2, at 17; Tribal Health Study, *supra* note 5, at 14; Tribal Task Force, *supra* note 8, at 14.
[11] Tribal Health Study, *supra* note 5, at 3, 47.
[12] *Id.* at 4; Tribal Task Force, *supra* note 8, at 14.
[13] Tribal Health Study, *supra* note 5, at 49; Natural Wild Rice, *supra* note 2, at 3.
[14] Tribal Health Study, *supra* note 5, at 10.
[15] *Id.* at 47.
[16] Natural Wild Rice, *supra* note 2, at 3.

Sulfate pollution, in particular, poses a serious danger to wild rice.[17] Sulfate interacts with bacteria in the water to create sulfide—which has been determined to be a primary controlling factor of the growth of wild rice.[18] As sulfide levels increase, wild rice seedling emergence, seedling survival, biomass growth, viable seed production, and seed mass all decrease.[19] For example, sulfate increases in Sandy Lake and Little Sandy Lake, caused by sulfate-contaminated seepage from the tailings basin at the nearby Minntac taconite facility, have caused the almost-total elimination of once-abundant wild rice in those lakes.[20]

MPCA has failed to adequately respond to the growing danger to wild rice waters posed by sulfate pollution. In 1973, recognizing the critical status of wild rice for the state, MPCA adopted a 10 mg/L water quality standard for sulfate in waters used for the production of wild rice ("Wild Rice Standard"), and that standard was approved by EPA pursuant to the Clean Water Act.[21] But in the decades since then, MPCA's enforcement of the Wild Rice Standard has been virtually nonexistent due to push back from mining interests and other industrial polluters.

After decades of inaction, in 2011 MPCA attempted to enforce the Wild Rice Standard for the first time since 1975 by issuing permits with sulfate-discharge limitations to mining company U.S. Steel.[22] This enforcement effort, along with steps to apply the rule to other mining companies, were met with a lawsuit from the Minnesota Chamber of Commerce on behalf of the mining industry, along with forceful lobbying for the standard's repeal. [23] In 2011, the Legislature passed

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[17] Tribal Task Force, *supra* note 8, at 23-25.
[18] *Id.* at 24.
[19] *Id.* at 23.
[20] *Id.* at 26-27.
[21] Minn. R. 7050.0224, subp. 2.
[22] *Minnesota Chamber of Com. v. Minnesota Pollution Control Agency*, No. A12-0950, 2012 WL 6554544, at *1-2 (Minn. App. Dec. 17, 2012).
[23] *Id.*

a law requiring MPCA to research and begin the process of amending the Wild Rice Standard—and in the meantime, requiring MPCA to "ensure" that no permittee would be required to spend funds on sulfate treatment technologies.[24] In 2014, MPCA published a draft study suggesting that site-specific standards, based on the amount of iron in the water, might be appropriate to protect wild rice, but also sought feedback on a preliminary proposed permit that would require U.S. Steel to comply with the current Wild Rice Standard at its Minntac facility.[25] The following year, the Legislature passed even more pointed legislation ("2015 Legislation"), which attempted to prohibit MPCA from listing wild rice waters as impaired for sulfate until MPCA "amends rules refining the wild rice water quality standard ... to consider all independent research and publicly funded research and to include criteria for identifying waters and a list of waters subject to the standard."[26] MPCA embarked on a new rulemaking and proposed a rule that would have weakened the 10 mg/L Wild Rice Standard, but an Administrative Law Judge disapproved of MPCA's proposed rule, and the rulemaking was never completed.[27] MPCA then asserted that the 2015 Legislation prohibited it from assessing or listing any wild rice waters impaired for sulfate on its Impaired Waters List, and repeatedly refused to take any steps toward listing waters or enforcing the standard, despite prompting from EPA.

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[24] Minn. Laws 2011, lst Spec. Sess., Ch. 2, Art. 4, Section 32 at (d).
[25] MPCA, *Analysis of the Wild Rice Sulfate Standard Study, Draft for Scientific Peer Review* (2014); Ltr. to Tinka Hyde, EPA, from Lori Swanson, Minnesota Attorney General (Aug. 12, 2016).
[26] Minn. Laws 2015, 1st Spec. Sess., Ch. 4, Art. 4, Section 136 ("2015 Legislation").
[27] Minn. Pollution Control Agency, Environmental Analysis and Outcomes Divisions, *Notice of Withdrawn Rules for Proposed Rules Amending the Sulfate Water Quality Standard Applicable to Wild Rice and Identification of Wild Rice Waters*, Revisor's ID Number 4324 (April 26, 2018), *available at* https://www.pca.state.mn.us/sites/default/files/wq-rule4-15oo.pdf.

As this history shows, since establishing the Wild Rice Standard nearly 50 years ago, MPCA has repeatedly failed to require compliance from polluters, or to take any steps to comply with its obligations under the Clean Water Act with regard to listing sulfate-impaired waters. This refusal to take action has been devastating to Minnesota's stands of wild rice, which have been diminished and lost across the state.[28] Ensuring the future of this critical resource will require coordinated, meaningful action by state and federal agencies, Tribal Nations, environmental advocates, and other interested parties.

C. EPA Has The Authority—And The Obligation—To Add Sulfate-Impaired Waters To Minnesota's Impaired Waters List.

MPCA's consistent failure to protect wild rice waters requires action by EPA. The Clean Water Act expressly grants EPA authority to "approve or disapprove" Minnesota's Impaired Waters List.[29] If EPA disapproves of the state's list, the Act instructs EPA to "identify such waters in the state" that should be listed as impaired.[30] The Act uses a cooperative federalism framework so that states and the federal government can develop "comprehensive solutions to prevent, reduce and eliminate pollution..."[31] Under normal circumstances, the process is straightforward: The state first designates bodies of waters according to their beneficial use, in this case, "water used for production of wild rice."[32] Next, the state sets water quality standards for certain pollutants in order

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[28] Tribal Health Study, *supra* note 5, at 10, 50.
[29] 33 U.S.C. § 1313(d)(2) ("If the Administrator disapproves such identification and load, he shall . . . identify such waters in such State and establish such loads for such waters as he determines necessary to implement the water quality standards applicable to such waters and upon such identification and establishment the State shall incorporate them into its current plan under subsection (e) of this section.")
[30] 33 U.S.C. § 1313(d)(2).
[31] 33 U.S.C. § 1251(d).
[32] Minn. R. 7050.0224, subp. 2.

to protect the use of those waters.[33] Then EPA approves or disapproves of those standards.[34] Every two years, the state submits a list of impaired waters that are not meeting the water quality standards.[35] And to achieve the standards, the state uses the National Pollutant Discharge Elimination System ("NPDES") to issue discharge permits.[36]

As Minnesota's Wild Rice Standard has been in place—and approved by EPA—for decades, the Clean Water Act unquestionably requires Minnesota to assess whether its wild rice waters meet the standard and, if not, to include those waters on its Impaired Waters List. But for years, Minnesota has failed to do so.

MPCA has blamed its failure to list waters impaired for sulfate on the 2015 Legislation. But regardless of the state law—which, in any case, was never intended to be the permanent prohibition MPCA now asserts it is[37]—MPCA was required to fulfill its obligations under the Clean Water Act. Federal laws preempt conflicting state laws: "[S]tate laws are preempted when they conflict with federal law. This includes cases where 'compliance with both federal and state regulations is a physical impossibility,' and those instances where the challenged state law 'stands as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress.'"[38] Despite the conflict between the 2015 Legislation and the Clean Water Act, MPCA

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[33] 33 U.S.C. § 1313(c).
[34] 33 U.S.C. § 1313(d)(2).
[35] 40 C.F.R. § 130.7(d)(1).
[36] *See* 40 C.F.R. § 123.21-.36 (describing state NPDES program requirements).
[37] The Legislature did not aim to permanently ban MPCA from listing sulfate-impaired wild rice waters. Rather, the 2015 Legislation required MPCA to complete a new sulfate standard for wild rice waters by 2018, then extended the deadline until 2019, and the ban was intended to last only throughout the rulemaking process. Minn. Laws 2015, 1st Spec. Sess., Ch. 4, Art. 4, Section 136(c); Minn. Laws 2017, Reg. Sess., Ch. 93, Art. 2, Section 149(c) (replacing "2018" with "2019"). As the 2019 deadline for rulemaking has now passed, arguably the ban on listing sulfate-impaired wild rice waters may also have expired.
[38] *Arizona v. United States*, 567 U.S. 387, 399 (2012).

was still required to submit the complete and accurate biennial list of sulfate-impaired wild rice waters required by federal law. Ultimately, the MPCA made the wrong choice by treating the 2015 Legislation as overruling federal law and abdicating from its delegated duties under the Clean Water Act.

Because of MPCA's failure to comply with the Clean Water Act, EPA must step in. The Clean Water Act not only allows, but *requires*, EPA to review MPCA's submitted water quality limited segments, and EPA can only approve those submissions that comply with the law.[39] Because the MPCA failed to list the wild rice waters that do not currently meet the existing Wild Rice Standard of 10 mg/L, the Clean Water Act instructs EPA to disapprove of that listing.[40] The 2015 Legislation cannot override EPA's duties under the Clean Water Act.[41] In any case, the 2015 Legislation does not attempt to abrogate EPA's authority over approving or disapproving MPCA's impaired water list—or even mention EPA at all. Rather, it attempts to inhibit MPCA's ability to comply with federal law.

Fortunately, the Clean Water Act was written to cure this type of problem. Previous iterations of the modern-day Clean Water Act required states to establish water quality standards but did not allow the federal government to step in when states failed to act.[42] By 1972, only half of states had established water quality standards.[43] Because this system proved ineffective to

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[39] 40 C.F.R. 130.7 (d)(2) ("The Regional Administrator shall approve a list developed under §130.7(b) that is submitted after the effective date of this rule *only* if it meets the requirements of §130.7(b) (emphasis added)).
[40] 33 U.S.C. § 1313(d)(2).
[41] [T]he acts of Congress . . . which being made in pursuance of the constitution, are supreme, and the State laws must yield to that supremacy. . ." *Gibbons v. Ogden*, 22 U.S. 1, 3 (1824).
[42] Water Quality Act of 1965, sec. 5, § 10, 79 Stat. at 907-08.
[43] *See* Kenneth M. Murchison, *Learning from More Than Five-and-A-Half Decades of Federal Water Pollution Control Legislation: Twenty Lessons for the Future*, 32 B.C. Envtl. Aff. L. Rev. 527, 534 (2005).

protect water quality, Congress passed the modern-day Clean Water Act that gives the federal government authority to step in when states fail to act.[44] This is exactly what EPA is obligated to do here. As Minnesota has refused to comply with its obligations to protect its wild rice waters, EPA must ensure that sulfate-impaired waters are added to Minnesota's Impaired Waters List in compliance with the Clean Water Act.

D. EPA Must Continue To Work With Tribal Nations To Identify Additional Sulfate-Impaired Waters For Inclusion On The Impaired Waters List.

While EPA's addition of 30 impaired waters is a laudable step, it is only the first of many that are needed to protect Minnesota's wild rice waters. As EPA's Decision Document notes, in 2017, MPCA created a list of approximately 1,300 waters it planned to identify as wild rice waters in its failed rulemaking, and both MPCA and EPA recognize this list as the minimum universe of waters subject to the wild rice beneficial use.[45] Many more of these waters may violate the Wild Rice Standard—and if so, they must be added to Minnesota's Impaired Waters List. Because this issue is so central to the health, culture, and history of Tribal communities, many Tribal Nations already have been pushing MPCA and EPA for years to add more waters to the list and to enforce the Wild Rice Standard. MCEA urges EPA to work closely with interested Tribes to identify more sulfate-impaired wild rice waters for inclusion on the state's list. Only by working together can agencies, Tribal leadership, and environmental advocates secure clean waters where wild rice can thrive for the benefit of all Minnesotans.

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[44] *Id.* (discussing the state compliance problems that the Clean Water Act sought to cure); 33 U.S.C. § 1313(d)(2).
[45] EPA Decision Document, at 9.

Sincerely,

s/Joy R. Anderson

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MESERB
Minnesota Environmental Science and Economic Review Board
Using science and economics to improve environmental regulations

June 30, 2021

VIA EMAIL ONLY

Mr. Paul Proto
Environmental Protection Agency
Region 5
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Re: EPA's Additions to Minnesota's 2020 Impaired Waters List for Sulfate Impairment

Dear Mr. Proto,

Thank you for the opportunity to comment on the Environmental Protection Agency's Additions to Minnesota's 2020 Impaired Waters List for Sulfate Impairment. The following comments are offered on behalf of the Minnesota Environmental Science and Economic Review Board ("MESERB"). We are a joint powers organization with more than 50 member cities, sanitary districts, and public utilities commissions in Minnesota that own and operate wastewater treatment facilities and hold NPDES permits. MESERB is made up of the operators, technicians, and directors at municipal wastewater facilities. Our mission is to protect our state's water resources by ensuring that water quality regulations that impact our communities are science-based, have reasonable and cost-effective implementation strategies, and produce meaningful benefits to water quality. MESERB members are among those who may be most affected by the addition of these waters to the impaired waters list.

Our members take their role as stewards of Minnesota's waters seriously, but our resources are limited. Adding these waters, and potentially others, to the impaired waters list for sulfate impairment could result in permit limits requiring municipalities, taxpayers, and the state to spend tens or hundreds of millions on unnecessary treatment — scarce resources that could be deployed for other important purposes, such as addressing other challenging water quality problems in our communities.

Both water and wild rice are important natural resource that Minnesota's citizens value, but these impairment listings are not supported by law or science. Creating a sulfate TMDL and imposing permit limits based on the wasteload allocations could divert resources from other problems that are causing greater harm to human or aquatic health. The technology to remove sulfate at the wastewater level is prohibitively expensive. Before starting down that path, the United States Environmental Protection Agency (EPA) should instead work with the Minnesota Pollution Control Agency (MPCA), the impacted native American tribes and other stakeholders to develop a standard that better reflects the more recent science and the complicated factors that affect wild rice.

EPA is Required to Use the Best Available Science and Should Not Implement a Demonstrably Outdated Water Quality Standard

In proposing to add 30 waterbodies to Minnesota's Impaired Waters List, EPA relies on (and misapplies) MPCA's outdated Wild Rice Sulfate Standard.[1] This standard is outdated and does not reflect the best available science on sulfate, wild rice, and the protection of the state's designated use for the production, cultivation, and consumption of wild rice in Minnesota.

The Clean Water Act (CWA) and its implementing regulations require that the states and EPA ensure that water quality standards, Total Maximum Daily Load (TMDL) studies and National Pollution Discharge Elimination System programs requirements are based on the best available information and a sound scientific rationale.[2] Further, the Clean Water Act, implementing regulations and applicable guidance requires that water quality standards and numeric criteria established as a part of those water quality standards be set at levels that are necessary to protect the applicable designated uses.[3]

In this instance, MPCA has expressly acknowledged that the state's existing Wild Rice Sulfate Standard is not based on the best-available information or a sound scientific rationale as required by the CWA.[4] In 2017, MPCA undertook rulemaking to update the outdated standard and MPCA proposed an alternative standard relying on updated scientific information that, in part, takes into consideration the complex relationship between sulfate, the presence of iron and carbon in soil sediment, and new information about the growth of wild rice plants.[5] Specifically, the Statement of Need and Reasonableness (SONAR), technical support document and related studies relied upon by MPCA in 2017 provide ample evidence that the 10 mg/l sulfate concentration guideline, which EPA improperly relies upon to propose to list waterbodies as impaired, is not based on the best available information or a sound scientific rationale and as a result was not set at level necessary to protect wild rice and the applicable designated use as required by the CWA.[6]

By relying on this outdated and inaccurate standard, the EPA's proposed action to add waters to Minnesota's impaired waters list is arbitrary and capricious, in excesses of EPA's statutory and regulatory authority and a violation of the CWA and its implementing regulations. Further, by proposing to list waters as impaired based on such outdated scientific information, EPA is setting up for failure the MPCA, NPDES permit holders, and ultimately the goal of protecting wild rice in a sensible way.

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[1] EPA Decision Document for The Partial Approval of Minnesota's 2020 Clean Water Act Section 303(d) List, March 26, 2021 ("EPA 2020 Decision Document") at 1.
[2] *See e.g.,* 33 U.S.C § 1313 (c)(2); 40 C.F.R. §§ 131.5 and 131.6; 40 C.F.R. § 130.7; 40 C.F.R. § 122; 40 C.F.R. § 124.
[3] *See* 40 C.F.R. § 131.6.
[4] *See e.g.,* Minnesota Pollution Control Agency, Statement of Need and Reasonableness, Amendment of the sulfate water quality standard applicable to wild rice and identification of wild rice waters. Minn. R. chapters 7050 and 7053, 2017 ("SONAR") and attachments. The SONAR specifically states that "the scientific understanding of the chemistry of sulfate in the environment and the mechanisms by which it affects wild rice has greatly improved." Id. at 19.
[5] Id. at 14.
[6] See e.g., Id. at 66-83.

How can MPCA complete a TMDL for a sulfate impairment or issue effluent limits to NPDES permit holders based on a water quality standard when its own scientists (and many others) have determined that the standard is not scientifically defensible or reasonable? Such action would force MPCA to violate both the CWA and state law. How can EPA expect MPCA to enforce effluent limits that will result in millions of dollars of compliance costs when the standard upon which those effluent limits will be based is demonstrably not scientifically defensible?

As discussed below, the potential costs and consequences that result from adding waterbodies to the Impaired Waters List are significant and our cities are concerned that we may be forced to spend millions of dollars to solve for listed wild rice-sulfate impairments that in fact do not exist. EPA's action will lead to significant litigation, expense, and a waste of limited resources, all of which could be better spent on protecting the environment and developing and implementing a more targeted approach to protecting wild rice. Our cities and our state do not have unlimited resources to address the myriad of water quality issues that we face currently, therefore, we should be focusing efforts to protect clean water resources where the science clearly indicates those efforts are necessary to protect water quality and designated uses.

The Impairment Declaration Misapplies the Adopted Wild Rice Standard

EPA's interpretation and application of the Minnesota's adopted Wild Rice Sulfate Standard in this instance is inconsistent with the adopted standard, a violation of the CWA, amounts to unpromulgated rulemaking under the Federal Administrative Procedures Act and violates traditional notions of cooperative federalism.

Minnesota established a wild rice beneficial use and adopted the Wild Rice Sulfate standard (Minn. R. 7050.0224) in 1973. It was thereafter approved by U.S. EPA pursuant to the requirements of the CWA. The Wild Rice Sulfate Standard as adopted by MPCA and approved by U.S. EPA is unique and the 10 mg/L numerical component of the state standard was not established nor intended to be implemented as a standalone numeric water quality criterion.[7]

The plain language of the rule makes it clear that the 10 mg/L sulfate concentration component of the standard "shall be used as a guide" and that an exceedance of the numeric guideline (i.e., 10 mg/L sulfate) is merely indicative of actual or potential impairment.[8] Thus under the rule the 10 mg/L sulfate guideline, if exceeded should trigger additional evaluations that focus on whether the designated use (production of wild rice) is actually impaired. These evaluations include, but are not limited to evaluating use impairment by referring to Handbook 60 as published by the U.S.

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[7] *See e.g.,* 2017 SONAR and attachments; *see also* Statement of Need and Reasonableness in the Matter of Proposed Revisions of Minnesota Rules Chapter 7050 and 7053, Relating to Water Quality Standards – Use Classifications 3 and 4; Revisor ID no. 04335 (MPCA 2020) at p. 41 and 104 *available at* https://www.pca.state.mn.us/sites/default/files/wq-rule4-17k.pdf (discussing the meaning of the "shall be used as a guide" language.

[8] Minn. R. 7050.0224, subp. 2.

Department of Agriculture.[9] Moreover, the rule expressly states that the 10 mg/L sulfate guideline is only applicable "during periods when the rice may be susceptible to damage by high sulfate levels."[10]

Rather than apply the Wild Rice Sulfate Rule as adopted, EPA's proposed action ignores the Wild Rice Sulfate Standard that MPCA adopted (and EPA approved) and is attempting to adopt and implement what amounts to a new numeric water quality criteria and water quality standard for sulfate via the Impaired Waters List review and approval process. [11] Such an action is inconsistent with the CWA and its implementing regulations, constitutes illegal unpromulgated rulemaking, and violates the Federal Administrative Procedures Act.

Further, EPA's findings make a selective reference to the MPCA's SONAR for its assertion that an evaluation of whether the elevated level of sulfate was found during a period when wild rice is susceptible is unnecessary.[12] Yet the EPA ignores other portions of the SONAR and the underlying data which explicitly demonstrate that wild rice can survive at much higher concentrations of sulfate and for longer durations, depending on the conditions.[13] This countervailing evidence in the SONAR demonstrates that the EPA cannot and should not apply the 10 mg/L sulfate guideline as if it were a numeric water quality criterion for CWA purposes.

Because the explicit language of the rule requires that the 10 mg/l sulfate level should only be used as a guide and the body of evidence demonstrates that levels of sulfate that far exceed the 10 mg/L level can support the healthy growth of wild rice in certain circumstances, the EPA should withdraw its proposed action and work with stakeholders to determine a better method for protecting wild rice waters.

Proposed Impaired Waters Are Not Wild Rice Waters

Minnesota's Wild Rice Sulfate Standard applies only to those waters which are designated as wild rice waters.[14] None of the 30 waters that the EPA proposes to add to the impaired waters list have been designated as wild rice waters in Minnesota rule nor through the process required by the CWA.[15]

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[9] Id. There is no evidence in EPA decision documents which indicated that EPA considered the recommendations of the Handbook 60 as required under the adopted rule.
[10] Id.
[11] EPA Decision Document at p. 3 (stating, without explanation, that the 10 mg/L sulfate guide is a numeric criterion for CWA purposes and establishing a two-part test to apply the rule).
[12] EPA 2020 Sulfate Decision Document, at 13 ("the scientific evaluation of sulfate conducted by MPCA to support its 2017 rule revisions found that wild rice is vulnerable to elevated sulfate concentrations year-round.").
[13] See SONAR at
[14] Minn. R. 7050.0470.
[15] EPA, Decision Document Regarding the Sulfate Impaired Waters EPA is Adding to the Minnesota 2020 Clean Water Act Section 303(D) List, March 26, 2021 ("EPA 2020 Sulfate Decision Document").

The EPA has circumvented this portion of the rule by relying on a list that the Administrative Law Judge explicitly rejected in 2018.[16] Such an action is inappropriate because it ignores the requirements of the Minnesota Administrative Procedures Act ("MAPA")[17] and applies a portion of a regulation that was specifically rejected by the ALJ in the state rulemaking process, which is inconsistent with the traditional notions of cooperative federalism under the CWA.

Misapplication of the Wild Rice Sulfate Rule Will Hinder Other Water Quality Efforts

In the comments MESERB submitted during the 2017 rulemaking process, we explained in detail how enforcing a strict 10 mg/l standard could impact cities and their ability to address water quality problems.[18] Communities that receive permit limits for sulfate will likely require additional treatment processes (e.g., reverse osmosis, membrane separation, evaporation/crystallization of brine). The capital and operation and maintenance costs associated with reverse osmosis and evaporation and crystallization treatment processes are extreme and can range between $10 million and $100s of millions, depending upon the size and unique characteristics of a given wastewater treatment facility.[19] In addition, the secondary costs and negative environmental externalities associated with energy use and the salty brine that results from the treatment process are also significant.[20] The MPCA went so far as to recognize "municipal sulfate treatment is likely to be unaffordable for greater than 97% of municipalities based solely on projected costs."[21]

This challenge is compounded by the other overwhelming infrastructure needs in greater Minnesota. Our communities must address the challenges of aging infrastructure, requirements to remove pollutants and nutrients such as phosphorus, chloride, mercury, and nitrogen, emerging chemicals, and pollutants such as PFAS and microplastics, and the destruction created by increasing numbers of extreme weather events. The most recent 20-year estimates by the EPA and MPCA for drinking water and wastewater needs are $7.5[22] billion and $4.12[23] billion, respectively. These estimates likely underestimate the total need because they do not include stormwater needs and they rely on self-reporting and therefore may not capture the true cost to meet new and evolving regulation.

Our communities take protecting water very seriously, but with the overwhelming challenges they will face in the coming years it is essential that investments in infrastructure be made wisely and that those investments be focused on the pollutants that are demonstrably causing water quality problems. When there is ample evidence that wild rice can grow in conditions where sulfate far exceeds the 10mg/L standard, it is irresponsible to declare this group of waters impaired without further investigation and analysis.

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[16] Id. at 11.
[17] See, e.g., Minn.Stat. 14.381 (2020) (prohibiting application of unadopted rule).
[18] Incorporate previous comments by reference?? Remove this footnote and reference ot earlier comments?
[19] *See* SONAR at pp. 182-183 and exhibit 42.
[20] SONAR at 184.
[21] SONAR at 212.
[22] EPA, Drinking Water Infrastructure Needs Survey and Assessment Sixth Report to Congress, March 28 at 36.
[23] MPCA, Future wastewater infrastructure needs and capital costs (lrwq-wwtp-1sy20),

Selective Application of 2017-2018 Rulemaking Demonstrate Need for Further Work on Standard

We are troubled that the EPA relies on selective portions of the 2017-18 rulemaking, such as the list of wild rice waters or the statement that wild rice can grow through the year, while ignoring the portions that do not support and at times contradict its impairment declaration, including evidence that wild rice can grow in the presence of sulfate far exceeding 30 mg/l in certain circumstances. Such selective application of the SONAR and its underlying data point to the larger problem at issue here – further work is necessary on developing a sulfate standard for wild rice waters.

Adding these 30 waters, and potentially more, to the impaired waters may unnecessarily divert resources away from other more pressing water quality priorities. We recognize that the protection of wild rice is challenging from both a scientific and political standpoint but moving forward with the addition of these water bodies to the impaired list will not resolve those issues. Rather than continue this current course, we urge the EPA to withdraw its proposed list of additions and work with stakeholders on addressing how wild rice can be protected in a scientifically sound manner.

We request that any responses to the foregoing be provided in writing to me at andy.bradshaw@ci.moorhead.mn.us and copied to MESERB's legal and regulatory consultant, Daniel Marx, at dmmarx@flaherty-hood.com.

Yours truly,

MINNESOTA ENVIRONMENTAL SCIENCE AND ECONOMIC REVIEW BOARD

Andy Bradshaw, Operations Manager
Moorhead Wastewater Treatment Facility
MESERB President
City of Moorhead
500 Center Avenue, Box 779
Moorhead, MN 56560

cc: MESERB members

IRON MINING ASSOCIATION OF MINNESOTA

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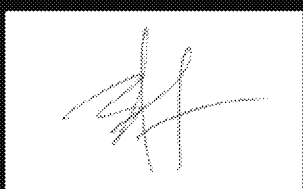
IRON MINING ASSOCIATION
OF MINNESOTA



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Comment #1448: Voicemail from Paula Maccabee (WaterLegacy)

To

Paul Proto (U.S. EPA, Region 5, Water Division)

September 1, 2021

Summary: WaterLegacy asked EPA whether WaterLegacy could submit information during the second public comment period regarding an additional water which WaterLegacy believes should be included on the Minnesota 2020 List of impaired Waters under Section 303(d) of the Clean Water Act.

From: Keith Hanson
To: Proto, Paul
Cc: Tony Kwilas (tkwilas@mnchamber.com); Keith Hanson
Subject: Minnesota"s 2020 303(d) List
Date: Friday, September 10, 2021 3:29:19 PM
Attachments: image001.png

Mr. Pronto,

The Minnesota Chamber of Commerce intends on commenting on EPA's Public Notice of additions to Minnesota's 2020 impaired waters list. To order to provide meaningful comments we are requesting the following information:

Requesting the following:

- Access to comments received on previous public notice
- Is there a response to comment document being prepared?
- Map/figure showing monitoring locations of sampling locations for the three new listings.
- Are the new listings based solely on Minnesota waters?
- Are the new listings based on monitoring data only or does it include anecdotal information/sources? If so can those be made available?'
- Is there a docket somewhere with this information?

I am making this request on behalf of the Minnesota Chamber of Commerce.

Thanks. Looking forward to hearing back on these topics.

Keith Hanson

Vice President
Senior Environmental Consultant
Minneapolis, MN office: 952.832.2616
cell: 218.590.2790
KHanson@barr.com
www.barr.com

From:	Marianne Bohren
To:	Proto, Paul
Cc:	Brandon Kohlts; Julie Macor
Subject:	Re: Request for information and extension of public comment period re EPA's Sept 1, 2021 additions to Minnesota"s 2020 Impaired Waters list
Date:	Friday, September 17, 2021 3:24:22 PM
Attachments:	ATT00001.txt

Mr. Proto,

I am writing on behalf of the Western Lake Superior Sanitary District (WLSSD) to request that EPA extend the public comment period in the above captioned matter from 30 to 60 days so that the public comment timeframe for the new proposed additions to Minnesota's 2020 303(d) List is consistent with the 60 public notice timeline required under Minn. Stat. sec. 114D.25.

WLSSD is potentially impacted by EPA's proposal to add the St. Louis River estuary segment (AUID 69-1291-04) to the Minnesota 2020 303(d) List for a sulfate impairment and we need additional time to evaluate this proposed impairment listing and provide detailed public comments to EPA for review and consideration.

In addition, to our request to extend the public comment period we respectfully request that you provide us with the background data utilized by EPA as a basis to propose to add the St. Louis River estuary segment (AUID 69-1291-04) to the Minnesota 2020 303(d) List for sulfate impairment. The information provided in the EPA public notice does not provide the detail necessary to evaluate and comment on this addition. In addition to the background data, we would also like a copy of any comments that EPA received from the public that served as a basis for EPA to propose to add (AUID 69-1291-04) to the impaired waters list. Any and all background data that you can share with us will be helpful in our review and development of comments in this important matter.

Thank you for your attention and please respond ASAP to our request to extend the public comment period.

Sincerely,

Marianne Bohren
Executive Director
Western Lake Superior Sanitary District

2626 Courtland Street
Duluth, MN 55806
218-740-4805
Fax: 218.336.1496
Marianne.bohren@wissd.com

From:	[redacted]
To:	Proto, Paul
Cc:	chavers@boisforte-nsn.gov; tgeshick.boisforte-nsn.gov; cholm; Kevin DuPuis; nancyschuldt@fdlrez.com; Bobby Deschampe; April McCormick; Faron.Jackson@llojibwe.net; ben.benoit; Eric Krumm; Brandy Toft; robert.larsen@lowersioux.com; deb.dirlam.lowersioux.com; Melanie.benjamin@millelacsband.com; Perry.Bunting.millelacsband.com; Katie Draper; gfrazer.mnchippewatribe.org; mnorthbird.mnchippewatribe.org; jsmith.mnchippewatribe.org; Shelley.Buck@piic.org; Leya Charles; dseki@redlakenation.org; SBowe@redlakenation.org; keith.anderson@shakopeedakota.org; Rebecca Crooks-Stratton (TO; Steve Albrecht (TO; scott.walz@shakopeedakota.org; kevinj@uppersiouxcommunity-nsn.gov; amandaw@uppersiouxcommunity-nsn.gov; michael.fairbanks@whiteearth-nsn.gov; monicahm@whiteearth.com; jeffh@lldrm.org
Subject:	Additional data demonstrating Bob"s Bay and Dunka Bay in Birch Lake exceed wild rice sulfate water quality standard
Date:	Monday, September 20, 2021 11:50:18 AM
Attachments:	[redacted]

Dear Mr. Proto:

Grand Portage is submitting copies of sulfate data collected from Birch Lake by the US Geological Survey, and the final 2021 Birch Lake sulfate sampling results from the 1854 Treaty Authority. The Geological Survey sulfate data can be found under the tab "Provisional WQ 6-23-2021" in the Birch Lake 2021 Sonde Data. Please consider this data part of our comments on the 2020 Impaired Waters List. On behalf of Grand Portage, we are again expressly asking that Bob's Bay and Dunka Bay in Birch Lake be included on the 2020 Impaired Waters List.

Sincerely,

[redacted]

From: [redacted]
To: Proto, Paul
Subject: Re: Notice: Second public comment period (9/1/2021 to 10/1/2021) on EPA additions to the Minnesota 2020 303(d) List
Date: Monday, September 20, 2021 12:50:48 PM

Good afternoon Paul - I'm curious about Birch Lake. It is my understanding that a lot of data were submitted and I understood it to show that Birch Lake was impaired, yet it wasn't included in your list below. Was it a data issue or a timing issue or something else? I won't share this conversation with anyone unless you say it is OK; if there are ways I can improve my communications with Region 5, I'd like to learn about them. Thanks

[redacted]

On Sep 1, 2021, at 1:51 PM, Proto, Paul <proto.paul@epa.gov> wrote:

Dear Commenter,

You are receiving the following courtesy notice because you submitted specific comments during EPA's previous comment period.

EPA is solicitating public comment on its identification of three water quality limited segments (WQLSs) impaired due to sulfate for inclusion on Minnesota's 2020 List of Impaired Waters under Section 303(d) of the Clean Water Act (CWA). Comments received by EPA in response to the 60-day public comment period for EPA's previous additions to Minnesota's 2020 List of Impaired Waters (4/29/21 to 6/30/21) supported the identification of three additional waters:

- Perch Lake (WID 69-0688-00),
- Sturgeon Lake (WID 25-0017-01) and
- St. Louis River estuary segment (WID 69-1291-04).

These three segments meet EPA's screening analysis described in Section III of its April 27, 2021, Decision Document and demonstrate sulfate impairment. Accordingly, EPA is adding these WQLSs to the Minnesota 2020 List of Impaired Waters.

The 30-day Public Comment Period for these three additions starts September 1, 2021 and ends October 1, 2021. Commenters who previously submitted comments during EPA's first public comment period (4/29/21 to 6/30/21) regarding EPA's previous additions to the Minnesota 2020 List of Impaired Waters need not resubmit comments already provided to EPA.

Information regarding the addition of these three waters can be found at *EPA's Minnesota 2020 303(d) Public Notice webpage*: https://www.epa.gov/tmdl/public-notice-epas-additions-minnesotas-2020-impaired-waters-list

After considering all public comments received during EPA's first and second public comment period and making any revisions as appropriate, EPA will transmit the final list to Minnesota.

EPA requests that any written comments be sent by email to Paul Proto (proto.paul@epa.gov) on or before **October 1, 2021**.

Paul Proto| Environmental Scientist | U.S. EPA, Region 5, Water Division, Watersheds & Wetlands Branch
77 W. Jackson Blvd., WW-16J | Chicago, IL 60604 | 312-353-8657 (Office) | proto.paul@epa.gov

MESERB
Minnesota Environmental Science and Economic Review Board
Using science and economics to improve environmental regulations

September 20, 2021

VIA EMAIL ONLY

Mr. Paul Proto
U.S. Environmental Protection Agency, Region 5
77 West Jackson Boulevard
Chicago, IL 60604
proto.paul@epa.gov

RE: EPA's Sept. 1 Additions to Minnesota's 2020 Impaired Waters List for Sulfate Impairment

Dear Mr. Proto,

I am writing on behalf of the Minnesota Environmental Science and Economic Review Board ("MESERB") to request that EPA extend the public comment period from 30 to 60 days on EPA's proposal to add Perch Lake (WID 69-0688-00), Sturgeon Lake (WID 25-0017-01) and a St. Louis River estuary segment (WID 69-1291-04) to Minnesota's 2020 List of Impaired Waters for sulfate impairments.

MESERB is a joint powers organization with more than 50 member cities, sanitary districts, and public utilities commissions in Minnesota that own and operate wastewater treatment facilities and hold National Pollution Discharge Elimination System ("NPDES") permits. MESERB is made up of the operators, technicians, and directors at municipal wastewater facilities. Our mission is to protect our state's water resources by ensuring that water quality regulations that impact our communities are science-based, have reasonable and cost-effective implementation strategies, and produce meaningful benefits to water quality. MESERB members are among those who may be directly affected by the addition of these additional water waters to the state's impaired waters list.

A 60-day public comment period is necessary to ensure that (a) our local government members have adequate time to review and comment on EPA's proposed action to list Perch Lake (WID 69-0688-00), Sturgeon Lake (WID 25-0017-01) and a St. Louis River estuary segment (WID 69-1291-04) as impaired, and (b) to ensure that the public comment timeframe used by EPA is consistent with our state procedures, which mandate a 60-day public comment period for additions to Minnesota's 303(d) list.[1]

In addition to our request to extend the public comment period, we also request that you provide us access to and/or copies of the following:

- The comments received by EPA in response to the initial 60-day public comment period for EPA's previous additions to Minnesota's 2020 List of Impaired Waters (4/29/21 to

[1] *See* Minn. Stat. § 114D.25, subd. 6.

6/30/21) that EPA relies upon as support for the proposed listing of the three additional waters; and

- All water quality data and other data and/or analysis that EPA relied upon to support its proposed action to list Perch Lake (WID 69-0688-00), Sturgeon Lake (WID 25-0017-01) and a St. Louis River estuary segment (WID 69-1291-04) as impaired for sulfate.

Thank you for your attention to this matter. Please provide responses to the foregoing requests to me at andy.bradshaw@ci.moorhead.mn.us and please copy MESERB's legal and regulatory consultant, Gretel Lee, at gllee@flaherty-hood.com on all correspondence.

Yours truly,

MINNESOTA ENVIRONMENTAL SCIENCE AND ECONOMIC REVIEW BOARD

Andy Bradshaw, Operations Manager
Moorhead Wastewater Treatment Facility
MESERB President
City of Moorhead
500 Center Avenue, Box 779
Moorhead, MN 56560

cc: MESERB members

Paula Goodman Maccabee, WaterLegacy Advocacy Director and Counsel
1961 Selby Ave., St. Paul, MN 55104 (651-646-8890)
paula@waterlegacy.org or pmaccabee@justchangelaw.com

September 29, 2021

Paul Proto (proto.paul@epa.gov)
United States Environmental Protection Agency Region 5
77 West Jackson Boulevard
Chicago, IL 60604

RE: Comments on EPA's Additions of Wild Rice Waters Impaired Due to Sulfate to Minnesota's Impaired Waters List, Updated Notice of September 1, 2021

Dear Mr. Proto,

These comments are submitted on behalf of WaterLegacy and Northeastern Minnesotans for Wilderness ("NMW"). We appreciate the oversight exercised by the U.S. Environmental Protection Agency ("EPA") under the Clean Water Act ("CWA") to partially disapprove Minnesota's 2020 CWA Section 303(d) impaired waters list and to propose listing 33 Water Quality Limited Segments ("WQLS") impaired due to sulfate affecting their beneficial use for wild rice.

We submitted comments on June 30, 2021, supporting EPA's April 28, 2021 Decision Document identifying 30 wild rice waters impaired due to excessive sulfate. This letter and its attachments provide comments on EPA's September 1, 2021 identification of three additional impaired waters: Perch Lake (WID 69-0688-00), Sturgeon Lake (WID 25-0017-01), and the St. Louis River estuary segment (WID 69-1291-04).

First, WaterLegacy and NMW strongly support EPA's proposed designation of each of these three additional waters. We agree with the EPA that these waters are wild rice waters where the data demonstrates sulfate impairment.

In addition, with these comments WaterLegacy and NMW provide further information to support EPA's identification of Birch Lake as a wild rice water where the data demonstrates sulfate impairment. We request that the EPA add Birch Lake to its list of WQLS impaired due to sulfate in excess of Minnesota's 10 milligrams per liter ("mg/L") wild rice standard.

The expert opinion of Dr. Patrick Brezonik supports listing Birch Lake as impaired.

Dr. Patrick Brezonik is an environmental chemist who has conducted research on surface water quality, chemistry, and related fields for over 55 years. His graduate degrees (M.S. and Ph.D.) are from the University of Wisconsin (Madison). During his professional career as a professor at two Research Level I institutions (University of Florida, 1966-1981) and University of Minnesota, 1981-), he mentored more than 65 M.S. and 25 Ph.D. students. Dr. Brezonik has authored or coauthored more than 150 peer-reviewed articles and book chapters. He was the Director of the University of Minnesota's Water Resources Center for 18 years, and he initiated the process to

establish the interdisciplinary graduate degree program in Water Resources Science, which today is the University's largest, free-standing graduate program. From 2004 to 2007, Dr. Brezonik served as program director for environmental engineering at the National Science Foundation. Over the years he has chaired or served on many National Research Council panels and committees on environmental issues. He also chaired the MPCA's scientific peer review panel pertaining to the wild rice sulfate standard. Finally, Dr. Brezonik is the lead author of a widely used textbook on water chemistry, and recently submitted the files for a second edition of the book for publication by Oxford University Press in 2022.

Dr. Brezonik reviewed the EPA's April 28, 2021 Decision Document and the comments and exhibits pertaining to Birch Lake submitted by WaterLegacy and NMW on June 30, 2021. He summarized his analysis as follows:

> [M]y analysis of these reports, letters, and data sheets supports the conclusions that (a) Birch Lake (69-0003-00) is properly designated as a wild rice lake and (b) sulfate concentrations in parts of the lake exceed the State of Minnesota's water quality sulfate standard of 10 mg/L for designated wild rice waters. Therefore, I conclude that the lake (or parts thereof) should be listed in the state's 303(d) list of impaired waters.

Specifically, Dr. Brezonik found that the 2011 Barr Report as well as his own observations demonstrated that "Birch Lake is a wild rice water body." With respect to sulfate impairment, he concluded, "Exhibits A, F, G, H, I, and J all report sulfate concentrations in parts of Birch Lake that exceed the 10 mg/L standard, some substantially so. The evidence for exceedances thus is not limited to one study or one set of laboratory analyses but is consistent across a range of years, investigating groups and analytical laboratories."

Dr. Brezonik reviewed the NMW data and found that "the sampling program used appropriate methods, the persons involved in the sampling were properly trained, and the field data collected in the effort appear reasonable. The sulfate analyses for all the NMW samples were done by a state-certified laboratory." He concluded with respect to the NMW data:

> [T]he sampling effort and associated results are reliable. In addition, the sampling effort was substantial in quantity (total of 104 samples over three different months), and I conclude that the evidence provided by the study is sufficient to demonstrate that parts of Birch Lake, specifically the areas in and around Bob's Bay and Dunka Bay are sulfate-impaired wild rice waters.

Dr. Brezonik explained his conclusion was also "supported by the earlier (but less extensive data in Exhibit F (1854 Treaty Authority) and the 2021 data in Exhibit I (NLSAP report)." He did not rely on MPCA monitoring data which used a turbidimetric method that he noted is longer accepted.

Dr. Brezonik unequivocally concluded:

> I consider the reports and data provided to me for this analysis sufficient to conclude that Birch Lake is a wild rice lake and that parts of the lake, specifically

> in the region around Bob's Bay and Dunka Bay, are impaired by sulfate concentrations that exceed the State of Minnesota's water quality standard for wild rice waters.

Dr. Brezonik's opinion letter (Attachment A) and current curriculum vitae (Attachment B) are enclosed with these comments.

The Clean Water Act requires EPA to independently analyze all existing and readily available data.

Once the EPA has disapproved a state's Section 303(d) list for failure to list WQLS, the EPA Regional Administrator has an independent responsibility to "identify such waters in such State and establish such loads for such waters *as he determines necessary* to implement the water quality standards applicable to such waters." 33 U.S.C. § 1313(d)(2) (emphasis added). Under implementing rules, the EPA's determination of what listings are necessary is not limited by state data:

> If the Regional Administrator disapproves such listing and loadings, he shall . . . *identify such waters in such State and establish such loads for such waters as determined necessary to implement applicable WQS* . . . After considering public comment and *making any revisions he deems appropriate*, the Regional Administrator shall transmit the listing and loads to the State, which shall incorporate them into its current WQM plan.

40 C.F.R. § 130.7(d)(2)(emphasis added). CWA regulations also require assembly and evaluation of "all existing and readily available water quality-related data and information," that waters for which water quality problems have been reported by the public should be analyzed, and "[t]hese organizations and groups should be actively solicited for research they may be conducting or reporting." 40 C.F.R. § 130.7(b)(5), (b)(5)(iii).

Under the CWA, EPA must use all existing and readily available data, whether or not a state has used that data. In *Thomas v. Jackson*, 581 F.3d 658, 668 (8th Cir. 2009), the court upheld EPA's decision to review Iowa's impaired waters list "in accordance with existing federal regulations" rather than limiting its review to "credible data" as defined in state law. In *Sierra Club, Inc. v. Leavitt*, 488 F.3d 904, 914 (11th Cir. 2007), the court of appeals held that "the EPA's data-cutoff decision contradicts the CWA's statutory and regulatory language such that it is not entitled to deference" under *Chevron, U.S.A, Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837, 842-43 (1984). In simple terms, if the EPA disapproves a state's impaired waters list, "the federal government must, per the CWA, assume the state's responsibilities." *Envtl. Law & Policy Ctr. v. United States EPA*, No. 3:17CV015154, 2018 U.S. Dist. LEXIS 61569 *11, 2018 WL 1740146 (N.D. Ohio, Apr. 11, 2018).

In identifying impaired waters under 33 U.S.C. § 1313(d)(2) and 40 C.F.R. § 130.7(d)(2), the EPA is no longer judging the state's process. The EPA is making its own determination of impaired waters necessary to implement water quality standards and to carry out the purposes of the CWA.

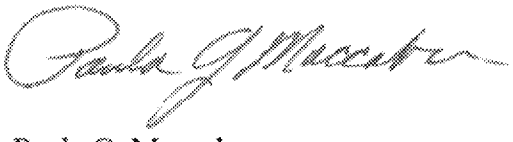
The purposes of the CWA would not be served by ignoring 2020 and 2021 data pertaining to sulfate impairment in Birch Lake when the EPA is making its identification of impaired waters in 2021. Had the MPCA conducted appropriate and timely sampling in Birch Lake or required mining industry representatives to provide their current and appropriately documented sampling to the MPCA, it is clear that such data would have demonstrated sulfate impairment. The public interest requires the prompt listing of wild rice waters impaired due to excessive sulfate. A data-driven analysis demonstrates that EPA should list the western half of Birch Lake, including Bob Bay and Dunka Bay, as impaired due to sulfate pollution. The CWA and the public interest require timely protection of wild rice and Birch Lake in compliance with Minnesota's wild rice sulfate water quality standard.

Conclusion

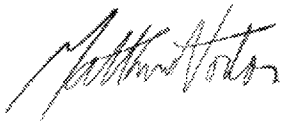
WaterLegacy and NMW strongly support the EPA's proposed listing of the 33 wild rice WQLS impaired due to sulfate as identified by EPA on April 28, 2021, and September 1, 2021. We request that EPA also identify Birch Lake as a wild rice WQLS impaired due to sulfate. One of Minnesota's foremost experts on water chemistry has found the data provided by WaterLegacy and NMW to be sufficient in quantity and quality to support this listing. The EPA is obligated under the CWA to consider all readily available data that demonstrates sulfate impairment. This obligation is independent of the process MPCA used or did not use to identify wild rice WQLS impaired due to sulfate.

Please feel free to contact Paula Maccabee (pmaccabee@justchangelaw.com or paula@waterlegacy.org) or Matt Norton (matt@savetheboundarywaters.org) if you have any questions about Birch Lake data or these comments.

Respectfully submitted,



Paula G. Maccabee
Advocacy Director and Counsel
WaterLegacy



Matt Norton
Policy and Science Director
Campaign to Save the Boundary Waters

cc. Barbara Wester (wester.barbara@epa.gov)

Attachments Enclosed

Patrick L. Brezonik, Ph.D.
Professor Emeritus
6600 Lyndale Ave. S #100
Richfield MN 55423

September 20, 2021

Paula Maccabee
Advocacy Director and Counsel
WaterLegacy

Matt Norton
Policy and Science Director
Northeastern Minnesotans for Wilderness

Dear Paula and Matt:

I am pleased to provide the following analysis of data and other information in support of designating Birch Lake (69-0003-00, northeast of Babbitt, St. Louis County, Minnesota) as an impaired water relative to the State of Minnesota's water quality standard for sulfate concentrations in waters designated for wild rice production. Paula contacted me regarding this analysis and provided the documents listed below, which I used in conducting the analysis.

First, let me provide some background information about myself to help you in evaluating the analysis. I am an environmental chemist by academic training and have conducted research on surface water quality, chemistry, and related fields for over 55 years. My graduate degrees (M.S. and Ph.D.) are from the University of Wisconsin (Madison). During my professional career as a professor at two Research-I institutions (University of Florida, 1966-1981) and University of Minnesota, 1981-), I mentored more than 65 M.S. and 25 Ph.D. students. Mostly with them, I have authored or coauthored more than 150 peer-reviewed articles and book chapters. I was the Director of the University of Minnesota's Water Resources Center for 18 years, and during that time I initiated the process to establish the interdisciplinary graduate degree program in Water Resources Science, which today is the University's largest, free-standing graduate program. From 2004 to 2007, I served as program director for environmental engineering at the National Science Foundation, and over the years I have chaired or served on many National Research Council panels and committees on environmental issues. Finally, I am the lead author of a widely used textbook on water chemistry, and my coauthor and I recently submitted the files for a second edition of the book, which our publisher, Oxford University Press, requested us to prepare for publication in 2022. A recent curriculum vita is attached.

Documents I used in my analysis are as follows:

- EPA April 27, 2021 decision document and cover letter adding sulfate impaired waters to Minnesota 303(d) list.
- WaterLegacy response letter to EPA dated June 30, 2021.
- Water Quality Technical Report, dated June 2021, by Eric Morrison, prepared for Water Legacy by Northern Lakes Scientific Advisory Panel (NLSAP).
- 2020-2021 Sulfate Sampling Effort for Birch Lake (69-0003-00), prepared by Lisa Pugh, NMW, dated June 28, 2021, and described as Exhibit G.

Patrick L. Brezonik, Ph.D.
Professor Emeritus
6600 Lyndale Ave. S #100
Richfield MN 55423

- Exhibit F, 1854 Treaty Authority Birch Lake Sulfate Sampling Results (pdf).
- Exhibit D, Technical memorandum from Barr Engineering to Craig Hartmann, Cliffs Erie regarding wild rice a wild rice literature review and field survey.
- Exhibit H, spreadsheet labeled Summary of NMW Report Data - Birch Lake
- Exhibit J, spreadsheet labeled Data Birch Lake – MPCA – Monitoring Reports (69-0003-00)
- Exhibit A, spreadsheet labeled WL Birch Lake – Add Wild Rice Impaired Waters (Except Birch Lake) (0000000).
- Exhibit E, Twin Metals, Figure 8-7, Wild Rice in Birch Lake (Dec. 18, 2019) (pdf)

In brief, my analysis of these reports, letters, and data sheets supports the conclusions that (a) Birch Lake (69-0003-00) is properly designated as a wild rice lake and (b) sulfate concentrations in parts of the lake exceed the State of Minnesota's water quality sulfate standard of 10 mg/L for designated wild rice waters. Therefore, I conclude that the lake (or parts thereof) should be listed in the state's 303(d) list of impaired waters.

Several of the documents listed above, including the 2011 Barr report (Exhibit D) demonstrate that Birch Lake is a wild rice water body. As an aside, I personally have observed extensive stands of wild rice on western parts of Birch Lake when my research group sampled it in 2015 and 2016 as part of NSF-funded research (unrelated to the issue at hand in this letter). Exhibits A, F, G, H, I, and J all report sulfate concentrations in parts of Birch Lake that exceed the 10 mg/L standard, some substantially so. The evidence for exceedances thus is not limited to one study or one set of laboratory analyses but is consistent across a range of years, investigating groups and analytical laboratories.

The most extensive sulfate concentration data available for Birch Lake appear to be those obtained by NMW, primarily in May and June 2021, with a few additional samples collected in August 2020. From Exhibit H, the grand average sulfate concentration for all 104 samples collected over that time period is 13.6 mg/L (higher than the 10 mg/L standard). Substantially higher concentrations were found in Bob's Bay: average = 29.6 mg/L (N – 17), and Dunka Bay: average = 15.3 mg/L (N = 6), as well as north of Dunka Bay: average = 11.4 mg/L (N = 43). Bob's Bay and Dunka Bay both have tributaries that drain existing or past iron mining lands.

I also reviewed the documentation accompanying the 2021 NMW data (Exhibit G) and find that the sampling program used appropriate methods, the persons involved in the sampling were properly trained, and the field data collected in the effort appear reasonable. The sulfate analyses for all the NMW samples were done by a state-certified laboratory. Based on these considerations, I conclude that the sampling effort and associated results are reliable. In addition, the sampling effort was substantial in quantity (total of 104 samples over three different months), and I conclude that the evidence provided by the study is sufficient to demonstrate that parts or Birch Lake, specifically the areas in and around Bob's Bay and Dunka Bay are sulfate-impaired wild rice waters. My conclusion is supported by the earlier (but less extensive data in Exhibit F (1854 Treaty Authority) and the 2021 data in Exhibit I (NLSAP report). I consider most of the data in Exhibit J (MPCA Monitoring Reports) to be questionable because it is based on an old (no longer accepted) turbidimetric method. Some of the data are quite old (e.g., 1970s) and

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thus should not be considered as relevant in making decisions about the status of a water body in 2021.

In summary, I consider the reports and data provided to me for this analysis sufficient to conclude that Birch Lake is a wild rice lake and that parts of the lake, specifically in the region around Bob's Bay and Dunka Bay, are impaired by sulfate concentrations that exceed the State of Minnesota's water quality standard for wild rice waters.

If you have any questions about my analysis, I would be happy to try to answer them. Thank you for the opportunity to review the reports and data.

Sincerely yours,

Patrick L. Brezonik

Patrick L. Brezonik, Ph.D.

RESUME

[redacted]

TITLE AND CONTACT INFORMATION

[redacted]

EDUCATION

1963 Marquette University, Milwaukee, Wisconsin, B.S., Chemistry and Mathematics
1965 University of Wisconsin, Madison, Wisconsin, M.S., Water Chemistry
1968 University of Wisconsin, Madison, Wisconsin, Ph.D., Water Chemistry

EMPLOYMENT

1966-1970	Assistant Professor, Department of Environmental Engineering Sciences, University of Florida, Gainesville
1970-1976	Associate Professor, Environmental Engineering Sciences, University of Florida
1971-1972	NSF Faculty Fellow and Guest Professor, EAWAG-ETH, Zurich, Switzerland
1976-1981	Professor, Environmental Engineering Sciences, University of Florida
1980	Guest Professor, summer quarter, EAWAG-ETH, Zurich, Switzerland
1981-2010	Professor, Department of Civil Engineering, University of Minnesota
1984-2010	Member of graduate faculty in Ecology
1985-2003	Director, Water Resources Center
1991-1995	Director of Graduate Studies, Water Resources Science graduate minor
1995-9; 2001-3	Founding Director of Graduate Studies, interdisciplinary Water Resources Science Graduate Program (M.S. and Ph.D.)
2004-2007	Program Director, Environmental Engineering, National Science Foundation
2005-2007	Program Manager, NSF Major Research Equipment and Facilities Program, WATERS Network Initiative

PROFESSIONAL SOCIETIES

American Academy of Environmental Engineers and Scientists
American Chemical Society, emeritus status
American Society of Limnology and Oceanography, emeritus status
Association of Environmental Engineering and Science Professors
International Humic Substances Society

PROFESSIONAL ACTIVITIES

Central States Water Environment Association, 2020, 2014: developed and led afternoon session on professional and engineering ethics at annual conference in St. Paul, MN (online in 2020).

Arizona State University, 2014: external reviewer for three multidisciplinary proposals for sustainability networks to be submitted to NSF.

American Academy of Environmental Engineers and Scientists, 2018- member certification by eminence committee; 2011-2013: led the development and oversaw the activities of nine workgroups charged with developing written and oral exams for the AAEES's new board certification program for environmental scientists.

American Chemical Society: *Environmental Science and Technology*, member of editorial board, 1973-1978;

assoc. editor for special issue in honor of Werner Stumm, 1998.
American Society of Civil Engineers: co-chair, second annual Environmental Engineering Division Conference; Gainesville, Florida, July 1975.
American Society of Limnology and Oceanography: *Limnology and Oceanography*, member of editorial board, 1975-1976; chair, organizing committee for 1985 annual meeting in Minneapolis.
Association of Environmental Engineering and Science Professors Foundation, member, Board of Directors, 2009-2011.
National Academy of Sciences-National Research Council:
Chair of Panel on Nitrates in the Environment, 1975-1978
Member of Committee on Restoration of Aquatic Systems, 1989-1991
Member of Committee to review EPA's EMAP program, 1991-1994
Member of *Water Science and Technology Board*, 1993-96
Chair of Committee on the Future of the Science of Inland Aquatic Ecosystems, 1994-96
Member of Committee on Ecological Indicators for Terrestrial and Aquatic Environments, 1996-9
Member of Committee on Restoration of the Greater Everglades Ecosystem (CROGEE), 1999-2004
Member of Committee on Upper Mississippi River Navigation Study, 2003-5
Chair, Committee to Review the St. Johns River Water Supply Impact Study, 2009-2011.
National Association of Water Institute Directors: member of Council of Representatives, 1986-1991; Chair, 1988-1990
National Association of State Universities and Land-Grant Colleges: member Board of Directors of Environmental Division, 1989-91
State of California, 2011: reviewer of documents in support of TMDL for toxic pollutants in the Dominguez Channel and Greater Los Angeles and Long Beach Harbor waters; 2009: reviewer of documents for proposed TMDL for nutrients and sediments for Lake Tahoe.
Universities Council on Water Resources: member of Board of Directors, 1988-1995; president, 1991-92
University of Florida, School of Natural Resources and Environment, member, external advisory council 2005-2010.
University of Iowa, Institute for Hydraulic Research, member external advisory council, 2008-2011.
Water Pollution Control Federation: Research Committee, 1973-1977; Standard Methods Committee, 1974-1980; chair, Joint Task Groups on Nitrate and Nitrite, 1976-1980
Water Environment Research Foundation: Research Council, 1992-97

GRADUATE STUDENTS SUPERVISED

64 M.S. and 26 Ph.D. students at Universities of Florida and Minnesota.
Ph.D. or post-Ph.D. advisees: Lawrence Baker, Geoffrey Chavula, Naomi Detenbeck, Filiz Dadaser, Andrew Fang, Brian Huser, Abdul Khwaja, Steven Kloiber, Carl Mach, Bruce Monson, Lorin Hatch, Keith Pilgrim, Carolyn Sampson, Noel Urban, Thomas Belanger, Eldon C. Blancher, Ralph Brooks, Francis X. Browne, Neil Carriker, Forest E. Dierberg, Charles W. Hendry, Jay J. Messer, Carl Miles, R. Walter Ogburn, III, James W. Patterson, Curtis Pollman, Earl E. Shannon, John R. Tuschall.

AWARDS

NSF *Science Faculty Fellowship*, 1971-72
Universities Council on Water Resources, *Friend of UCOWR*, 1996
University of Minnesota, *Fesler-Lampert Chair in Urban and Regional Affairs*, 2003-4
Association of Environmental Engineering and Science Professors, *Distinguished Service Award*, 2004
US Geological Survey, *Benchmark Award*, for distinguished service to WRRI program, 2005
Universities Council on Water Resources, *Warren Hall Medal*, 2007
University of Minnesota, *Dave Ford Water Resources Award*, 2007
US EPA, *Career Appreciation Award*, 2010
AAEES, Board Certified Environmental Scientist (BCES), by eminence, 2012

RECENT UNIVERSITY SERVICE ACTIVITIES

Member, search committee for Dean of College of Continuing Education, 2000-1
Member, department head search committee for Dept. of Soil, Water, and Climate, 2000-2
Member, Dept. of Civil Engineering Planning Committee, 2001-2
Member, College of Natural Resources Administrative Council, 1998-2003
Member, Graduate School Constitution Committee, 2001-2
Member, Graduate School Ethics Advocates Committee, 1999-2001
Chair, Faculty Education Advisory Committee for Office of the Vice-President for Research, 2001-3
Member Senate Judicial Committee, 2000-2004

RESEARCH INTERESTS

Chemistry and quality of natural waters; eutrophication of lakes and rivers; nutrient cycling and chemistry; phosphorus dynamics in sediment-water systems; transport and retention processes for nitrogen in large river systems and impacts on hypoxia in coastal waters; sources and distribution of acid precipitation and its ecological effects on lakes; biogeochemical cycling of mercury and other metals; heavy metal reactivity and speciation; natural organic matter in water; aquatic photochemistry; kinetics of chemical processes in aquatic systems; application of GIS and satellite imagery to regional-scale modeling and analysis of lake and river water quality; scale issues in watershed science and management; development of indicators and sampling designs for ecological monitoring and assessment programs.

RESEARCH and WORKSHOP GRANTS

Major grants during last ten years; PI or Co-PI on ~50 grants before 1996

1. U.S. EPA/NSF, Integrating Modeling and Management of Agriculturally-Impacted Watersheds: Issues of Spatial and Temporal Scale, 1996-2000; project manager and PI with three other co-PIs; $800K
2. MN Pollution Control Agency, Effectiveness and impacts of chemical treatment of stormwater inputs to lakes for phosphorus control, 1997-2000; $125K
3. U.S. EPA/NOAA. Effects of nutrient source reductions in the Mississippi-Atchafalaya Basin on water quality conditions in these waters and on hypoxia in the Gulf of Mexico, 1997-99; one of two co-PIs; $99K
4. Metropolitan Council, Development of GIS and satellite imagery tools for regional water quality assessment, 1998-2000, $100K; PI with two co-investigators
5. Sea Grant. Role of nitrate-induced photolysis of natural organic matter and organic contaminants in Lake Superior, 1998-2001, $160K
6. U.S. Geological Survey, WRRI Regional grant program. Role of NOM and humic substance in the chemical binding and photochemical reactivity of mercury and methylmercury, 1998-2000, co-PI; $55K
7. MN Pollution Control Agency. Bioavailability of phosphorus in soils of the Minnesota River Basin, 1998-99; one of two co-PIs; $20K
8. MN Pollution Control Agency. Effects of alum treatment on phosphorus availability to macrophyte communities in urban lakes, 1999-2002; co-PI; $75K
9. NASA. Regional center for application of satellite imagery to natural resources and environmental research, 1999-2002; co-investigator; $900K
10. NSF. Coupled biogeochemical cycles of carbon, nitrogen, phosphorus, water and salts in urban and agricultural systems; PI with four co-PIs, $99K, 2001-2
11. MN DNR. Advanced applications of satellite imagery for lake quality assessments, one of two co-PIs; $99K, 2001-3
12. NSF. CLEANER workshop planning grant; $45K, 2002
13. NSF. FAME Symposium; $80K, 2003

PUBLICATIONS

BOOKS

Brezonik, P. L. and W. A. Arnold. 2011. *Water Chemistry: An Introduction to the Chemistry of Natural*

and Engineered Aquatic Systems, Oxford University Press, New York, 782 p.

Brezonik. P. L. and W. A. Arnold. 2022. *Water Chemistry, 2nd Ed.: Exploring the Chemical Processes and Composition of Natural and Engineered Aquatic Systems*, Oxford University Press, New York, in production.

Brezonik, P. L. (chair) 1996. *Protecting Freshwater Ecosystems: Revitalizing Education in Limnology.* National Academy Press, Washington, D.C., 450 p.

Brezonik, P. L. 1994. *Chemical Kinetics and Process Dynamics in Aquatic Systems.* Lewis Publ.-CRC Press, Boca Raton, FL, 754 p.

MONOGRAPHS and JOURNAL ISSUES EDITED

Brezonik, P.L. and J.L. Fox (Eds.), 1975. *Water Quality Management Through Biological Control.* Proc. Symp. co-sponsored by U.S. EPA and Univ. Florida, Publ. 07-75-01, Dept. Environ. Eng. Sci., Univ. of Florida, Gainesville, 164 p.

Brezonik, P.L. (chair). 1978. *Nitrates in the Environment.* Panel Report for the National Research Council, Washington, D.C.

Brezonik, P.L. and J.E. Perry (Eds.). 1989. Minnesota's Water Resources. A special issue devoted to the status of water research and water management concerns in Minnesota. *J. Minnesota Acad. of Sci.* **55**: (No. 1), 160 p.

Brezonik, P.L. (Ed.) 1992. Issues of Human Diversity in Water Resources, *Water Resources Update*, Issue No. 89,

Brezonik, P.L. and D.H. Moreau (Eds.) 1994. The Clean Water Act Revisited. *Water Resources Update*, Issue No. 94, 90 p.

Brezonik, P.L. (Ed.) 1996. Prospects for Limnology in its Second Century. *Water Resources Update*, Issue No. 99, ~45 p.

JOURNAL ARTICLES

Germolus, N., P. L. Brezonik, R. M. Hozalski, and J. C. Finlay. 2021. Long-term water color and flow trends in the Mississippi River headwaters, 1944-2010. *Limnol. Oceanogr.* **66**: 3552-3567.

Olmanson, L. G., B. P. Page, J. C. Finlay, P. L. Brezonik, M. E. Bauer, C. G. Griffin, and R. M. Hozalski. 2020. Regional measurements and spatial/temporal analysis of CDOM in 10,000+ optically variable Minnesota Lakes using Landsat 8 imagery. Sci. Tot. Environ. **724**: 138141.

Chen, Y., R. M. Hozalski, L. G. Olmanson, C. G. Griffin, J. C. Finlay, P. L. Brezonik, and W. A. Arnold. 2020. Prediction of photochemically produced reactive intermediates in surface waters via satellite remote sensing. *Environ. Sci. Technol.* **54**: 6671–6681.

Chen, Y., W. A. Arnold, C. G. Griffin, L. G. Olmanson, P. L. Brezonik, and R. M. Hozalski. 2019. Assessment of the chlorine demand and disinfection byproduct formation potential of surface waters via satellite remote sensing. Wat. Res. **165**: 15001.

Brezonik, P. L., J. C. Finlay, C. G. Griffin, W. A. Arnold, E. H. Boardman, N. Germolus, R. M. Hozalski, and L. G. Olmanson. 2019. Iron influence on dissolved color in lakes of the Upper Great Lakes States. *PLoS ONE* 14(2): e0211979. https://doi.org/10.1371/journal.pone.0211979.

Brezonik, P. L., R. W. Bouchard, Jr., J. C. Finlay, C. G. Griffin, L. G. Olmanson, J. P. Anderson, W. A. Arnold, and R. M. Hozalski. 2019. Color, chlorophyll a, and suspended solids effects on Secchi depth in lakes: implications for trophic state assessment. *Ecol. Appl.* 29(3):e01871. https://doi.org/10.1002/eap.1871.

Griffin, C. G., J. C. Finlay, P. L. Brezonik, L. G. Olmanson, and R. M. Hozalski. 2018 Limitations on using CDOM as a proxy for DOC in temperate lakes. *Water Research* **144**: 719-727. https://doi.org/10.1016/j.watres.2018.08.007

Brezonik, P. L., P. R. Bloom, R. L. Sleighter, R. M. Cory, A. R. Khwaja, and P. G. Hatcher. 2015. Analysis of chemical differences of aquatic humic substances extracted by XAD-8 and DEAE-cellulose. *J. Environ. Chem. Engr.* **3**: 2982-2990.

Olmanson, L. G., P. L. Brezonik, J. C. Finlay, and M. E. Bauer. 2016. Comparison of Landsat 8 and Landsat

7 for regional measurements of CDOM and water clarity in lakes. Remote Sens. Environ. 185: 119-128. https://doi.org/10.1016/j.rse.2016.01.007.

Brezonik, P. L., L. G. Olmanson, J. C. Finlay, and M. E. Bauer. 2015. Factors affecting the measurement of CDOM by remote sensing of optically complex inland waters. *Remote Sens. Environ.* **155**: 199-215. DOI: 10.1016/j.rse.2014.04.033.

Olmanson, L. G., P. L. Brezonik and M. E. Bauer. 2013. Geospatial and temporal analysis of a 20-year record of Landsat-based water clarity in Minnesota's 10,000 lakes. *J. Amer. Water Resour. Assoc.* **50**(3): 748-761. DOI: 10.1111/jawr.12138.

Olmanson, L. G., P. L. Brezonik and M. E. Bauer. 2013. Airborne hyperspectral remote sensing to assess spatial distribution of water quality characteristics in large rivers: The Mississippi River and its tributaries in Minnesota. *Remote Sens. Environ.* **130**: 254-265.

Brezonik, P. L. and W. A. Arnold. 2012. Water chemistry: fifty years of change and progress. *Environ. Sci. Technol.* **46**: 5650-5657.

Olmanson, L. G., P. L. Brezonik and M. E. Bauer. 2011. Evaluation of medium to low resolution satellite imagery for regional lake water quality assessments. *Water Resources Res.* **47**: DOI: 10.1029/2011WR011005.

Huser, B. J., P. L. Brezonik, and R. M. Newman. 2011. Effects of alum treatment on water quality and sediment in the Minneapolis Chain of Lakes, Minnesota, USA, *Lake Reserv. Managem.*, **27**: 220-228.

Chavula, G., P. Brezonik, and M. Bauer. 2011. Land use and land cover change (LULC) in the Lake Malawi drainage basin, 1982-2005. *Int. J. Geosci.* **2**: 172-178.

Khwaja, A. R., P. R. Bloom and P. L. Brezonik. 2010. Binding strength of methylmercury to aquatic NOM. *Environ. Sci. Technol.* **44**: 6151-6156.

Chavula, G., P. Brezonik, P. Thenkabail, T. Johnson, and M. Bauer. 2009. Estimating the surface temperature of Lake Malawi using AVHRR and MODIS satellite imagery. *Phys. Chem. Earth Pts. A/B/C* **34**: 749-754.

Chavula, G., P. Brezonik, P. Thenkabail, T. Johnson, and M. Bauer. 2009. Estimating chlorophyll concentration in Lake Malawi from MODIS satellite imagery. *Phys. Chem. Earth Pts. A/B/C* **34**: 755-760.

Dadaser-Celik, F., J. S. Coggins, P. L. Brezonik, and H. G. Stefan. 2009. The projected costs and benefits of water diversion to and from the Sultan Marshes (Turkey). *Ecol. Econ.* **68**: 1496-1506.

Dadaser-Celik, F., P. L. Brezonik, and H. G. Stefan. 2008. Agricultural and environmental changes after irrigation management transfer in the Develi Basin, Turkey. *Irrig. Drainage Syst.* **22**: 47-66.

Dadaser-Celik, F., M.E. Bauer, P.L. Brezonik, and H.G. Stefan. 2008. Changes in the Sultan Marshes ecosystem (Turkey) in satellite images 1980–2003. *Wetlands* **28**(3):852-865.

Olmanson, L. G., M. E. Bauer, and P. L. Brezonik. 2008. A 20-year Landsat record of water clarity in Minnesota's 10,000 lakes. *Remote Sens. Environ.* **112**: 4086-97.

Dadaser-Celik, F., P. L. Brezonik, and H. G. Stefan. 2007. Hydrologic sustainability of the Sultan Marshes in Turkey. *Water Internat.* **32**: 856-76.

Hines, N. A. and P. L. Brezonik. 2007. Input-output analysis of mercury forms for a small lake in northern Minnesota. *Biogeochem.* **84**: 265-84.

Pilgrim, K. R., B. Huser, and P. L. Brezonik. 2007. A method for comparative evaluation of whole-lake and inflow alum treatment. *Water Research* **41**: 1215-24.

Rockne, K. J. and P. L. Brezonik. 2006. Nutrient removal in a cold-region wastewater stabilization pond: importance of ammonia volatilization. *J. Environ. Eng. (ASCE)* 132 (4): 451-459.

Dadaser-Celik, F., H. G. Stefan, and P. L. Brezonik. 2006. Dynamic hydrologic model of the Örtülüakar marsh in Turkey. *Wetlands* **26**: 1089-1102.

Khwaja, A. R., P. R. Bloom, and P. L. Brezonik. 2006. Binding constants of divalent mercury (Hg^{2+}) in soil humic acids and soil organic matter. *Environ. Sci. Technol.* 40: 844-49.

Menken, K., P. L. Brezonik, and M. E. Bauer. 2006. Influence of chlorophyll and humic color on reflectance spectra of lakes: implications for measurement of lake-water properties by remote sensing. *Lake Reserv. Manage.* 22: 179-190.

Pilgrim, K. M. and P. L. Brezonik. 2005. Treatment of lake inflows with alum for phosphorus removal. *Lake Reserv. Manage.* **21**: 1-11.

Pilgrim, K. M. and P. L. Brezonik. 2005. Evaluation of the potential adverse effects of lake inflow treatment with alum. *Lake Reserv. Manage.* **21**: 78-88.

Fang, F., K. W. Easter, and P. L. Brezonik. 2005. Point-nonpoint source water quality trading: a case study in the Minnesota River basin. *J. Am. Wat. Resources Assoc.* **41**: 645-58.

Fang, F., P. L. Brezonik, D. J. Mulla, and L. K. Hatch. 2005. Characterization of soil algal bioavailable phosphorus in the Minnesota River Basin. *Soil Sci. Soc. Am. J.* 69:1016–1025.

Brezonik, P. L., K. Menken, and M. E. Bauer. 2005. Landsat-based remote sensing of lake water quality characteristics, including chlorophyll and colored dissolved organic matter (CDOM). *Lake Reserv. Manage.* 21: 373-382.

Hines, N. A. and P. L. Brezonik. 2004. Mercury dynamics in a small northern Minnesota lake: water to air exchange and photoreactions of mercury. *Mar. Chem.* **90**:137-149.

Hines, N. A., P. L. Brezonik, and D. R. Engstrom. 2004. Sediment and porewater profiles and fluxes of mercury and methylmercury in a small seepage lake in northern Minnesota. *Environ. Sci. Technol.* **38**: 6610-6617.

Sawaya, K., L. Olmanson, N. Heinert, P. L. Brezonik, and M. E. Bauer. 2003. Extending satellite remote sensing to local scales: Land and water resource monitoring using high-resolution imagery. *Remote Sens. Environ.* **88**: 144-156.

Sampson C. J. and P. L. Brezonik. 2003. Responses of nutrients to experimental acidification and recovery in Little Rock Lake, USA. *Water Air Soil Poll.* **142**: 39-57.

Sampson C. J. and P. L. Brezonik. 2003. Ion budgets and sediment-water interactions during the experimental acidification and recovery of Little Rock Lake, Wisconsin. *Environ. Sci. Technol.* 37: 5625-5635.

Brezonik, P. L., C. E. Mach, and C. J. Sampson. 2003. Geochemical controls for Al, Fe, Mn, Cd, Cu, Pb, and Zn during experimental acidification and recovery of Little Rock Lake, WI, USA. *Biogeochem.* **62**: 119-143.

Fang, F., P. L. Brezonik, D. J. Mulla, and L. K. Hatch. 2002. Estimating runoff phosphorus loss in the Minnesota River Basin. *J. Env. Qual.* **31:** 1918-29.

Brezonik, P. L. and T. H. Stadelmann. 2002. Analysis and predictive models of stormwater runoff volumes, loads, and pollutant concentrations from watersheds in the Twin Cities (Minnesota, USA) metropolitan area. *Water Research* **36**: 1743-57.

Kloiber, S. M., P. L. Brezonik, L. G. Olmanson, and M. E. Bauer. 2002. A procedure for regional lake water clarity assessment using Landsat multispectral data. *Remote Sens. Environ.* **82**: 38-47.

Kloiber, S. M., P. L. Brezonik, and M. E. Bauer. 2002. Application of Landsat imagery to regional-scale assessments of lake clarity. *Water Research* **36**: 4330-40.

Urban, N. R., C. J. Sampson, P. L. Brezonik, and L. A. Baker. 2001. Sulfur cycling in the water column of Little Rock Lake, Wisconsin. *Biogeochem.* **52**: 41-77.

Hatch, L. K., A. Mallawatantri, D. Wheeler, A. Gleason, D. Mulla, J. Perry, K. W. Easter, R. Smith, L. Gerlach, and P.L. Brezonik. 2001. Land management at the major watershed– agroecoregion intersection. *J. Soil Water Conserv.* **56**: 44-51.

Stadelmann, T. H. and P. L. Brezonik. 2001. Seasonal patterns of chlorophyll *a* and Secchi disk transparency in lakes of east-central Minnesota: implications for design of ground- and satellite-based monitoring programs. *Lake Reserv. Manage.* **17**: 299-314.

Kloiber, S. M., T. Anderle, P. L. Brezonik, L. Olmanson, M. E. Bauer, and D. A. Brown. 2000. Satellite imagery: an efficient methods for trophic state assessment. *Arch. Hydrobiol. Adv. Limnol.* **55**: 137–151.

Monson, B. A. and P. L. Brezonik. 1999. Influence of food, aquatic humus and alkalinity on methylmercury uptake by *Daphnia magna*. *Environ. Toxicol. & Chem.* **18**: 560-566.

Brezonik, P. L., K. W. Easter, L. Hatch, D. J. Mulla, and J. Perry. 1999. Management of diffuse pollution in agricultural watersheds: lessons from the Minnesota River. *Wat. Sci. Tech.* **39**: 323-340.

Frost, T. M., P. K. Montz, T. K. Kratz, T. Badillo, P. L. Brezonik, M. J. Gonzalez, R. G. Rada, C. J. Watras, K. E. Webster, J. G. Wiener, C. E. Williamson, and D. P. Morris. 1999. Multiple stresses from a single agent: Diverse responses to the experimental acidification of Little Rock Lake, Wisconsin. *Limnol. Oceanogr.* **44**: 784-794.

Brezonik, P. L. and D. R. Engstrom. 1998. Modern and historic accumulation rates of phosphorus in Lake Okeechobee, Florida. *J. Paleolimnol.* **20**: 31-46.

Brezonik, P. L. and J. Fulkerson-Brekken. 1998. Indirect photolysis of acetochlor: rate constant of a nitrate-mediated hydroxyl radical reaction. *Chemosphere* **36**: 2699-2704.

Monson, B. A. and P. L. Brezonik. 1998. Seasonal patterns of mercury species in water and plankton from softwater lakes in northeastern Minnesota. *Biogeochem.* **40**: 147-162.

Brezonik, P. L. and J. Fulkerson-Brekken. 1998. Nitrate-induced photolysis in natural waters: controls on concentrations of hydroxyl radical photo-intermediates by natural scavenging agents. *Environ. Sci. Technol.* **32**: 3004-3010.

Sampson, C. J., P. L. Brezonik, T. M. Frost, K. E. Webster, and T. D. Simonson. 1996. Experimental acidification of Little Rock Lake, Wisconsin: the first four years of chemical and biological recovery, *Water, Air, Soil Pollut.* **72**: 1713-1719.

Urban, N., P. L. Brezonik, L. A. Baker, and L. A. Sherman. 1994. Rates of sulfate reduction and diffusion in sediments of Little Rock Lake, Wisconsin. *Limnol. Oceanogr.* **39**: 797-815.

Sherman, L. A., P. L. Brezonik, and L. A. Baker. 1994. Spatial and temporal variations in porewater chemistry in a small seepage lake: implications for estimating in-lake alkalinity generation. *Limnol. Oceanogr.* **39:** 1155-71.

Erdmann, J. B., H. G. Stefan, and P. L. Brezonik. 1994. Analysis of wind- and ship-induced sediment resuspension in Duluth-Superior harbor. *Water Resources Bull.* **30**: 1043-1053.

Webster, K. E., P. L. Brezonik, and B. J. Holdhusen. 1993. Temporal trends in low-alkalinity lakes of the Upper Midwest (1983-1989). *Water, Air, Soil Pollut.* **67**: 397-414.

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Minnesota Center for
Environmental Advocacy

September 29, 2021

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VIA E-MAIL

RE: Minnesota Center for Environmental Advocacy's Additional Comments on EPA's Additions to Minnesota's 2020 Impaired Waters List

Dear Mr. Proto,

Thank you for the opportunity to provide comments on the three additional water quality limited segments ("WQLS") added to Minnesota's 2020 Impaired Waters List by the Environmental Protection Agency ("EPA"). As Minnesota Center for Environmental Advocacy ("MCEA")[1] stated in its initial comments, dated June 30, 2021, MCEA strongly supports adding WQLSs used for the production of wild rice that are impaired for sulfate to Minnesota's list, applauds EPA for taking this long-overdue step, and asks that more sulfate-impaired waters be added to the list.

MCEA supports the addition of Perch Lake, Sturgeon Lake, and a St. Louis River estuary segment to the 2020 Impaired Waters list. However, EPA's rationale for choosing these three particular segments and excluding others is unclear. Other comments, including the Joint Tribal Comments and WaterLegacy's comments, have identified a number of additional wild rice waters

[1] MCEA is a Minnesota non-profit organization whose mission is to use the law, science, and research to preserve and protect Minnesota's natural resources, its wildlife, and the health of its people. For over forty years, MCEA has worked with citizens and government decision-makers to protect and improve the quality of Minnesota's environment, including working to address threats to Minnesota's water quality.

impaired for sulfate that have not been added to the list. MCEA asks that EPA clarify its reasoning for selecting these three particular WQLSs while declining to add others. This will help advocates understand the reasons for WQLSs being chosen for inclusion on the list and will help guide future public advocacy and engagement for other waters.

In addition, MCEA asks EPA to continue working with the representatives of Tribal Nations to identify additional sulfate-impaired wild rice waters for inclusion on Minnesota's Impaired Waters List. The Joint Tribal Comments identify a number of other wild rice waters that are currently impaired for sulfate and others that are likely impaired but require further study, and these should be evaluated for future inclusion on the list. Because of the importance of wild rice to the health, culture, and history of Tribal communities, MCEA urges EPA to continue to work with Tribal Nations and other advocates to ensure that this important resource is protected for the benefit of all Minnesotans.

Sincerely,

s/Joy R. Anderson
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MINNESOTA CHAMBER OF COMMERCE

GROWING MINNESOTA

September 29, 2021

United States Environmental Protection Agency
Region 5
77 West Jackson Boulevard
Chicago, IL 60604-3590

Re: Addition of Waters to Minnesota's 2020 List of Impaired Waters under Clear Water Act, Section 303(d)

Dear United States Environmental Protection Agency:

The Minnesota Chamber of Commerce (Chamber) is a statewide business organization representing businesses (utilities, mining, manufacturing, services providers, etc.) that will be impacted by the listing of Minnesota waterbodies as impaired for sulfate. The Chamber appreciates the opportunity to comment on the United States Environmental Protection Agency (EPA) *Decision Document Regarding the Sulfate Impaired Waters EPA is Adding to the Minnesota 2020 Clean Water Act Section 303(d) List.*

On June 29, 2021, the Chamber submitted comments to the EPA that expressed disagreement with the EPA's proposed listing of waters as impaired for sulfate based on several concerns. That comment letter is enclosed for reference.

On September 1, 2021, the EPA issued a public notice identifying three additional WQLSs for inclusion on the Minnesota 2020 Section 303(d) list as impaired for sulfate.

The Chamber strongly encourages the EPA to consider the original concerns expressed in our June 29, 2021 comment letter (enclosed), as these concerns also apply to EPA's public notice issued on September 1, 2021. The Chamber further disagrees with the EPA's proposed listing of the three additional waters as impaired for sulfate based on:

- None of the three waters that the EPA is proposing to add to the Minnesota 2020 Section 303(d) list have been officially designated as wild rice waters and thus it is not appropriate to list them as impaired for sulfate. It is also not the appropriate procedure for the EPA to assign and/or designate beneficial uses for waters as part of their review of a state's impaired waters list.

- The St. Louis River Estuary is an interstate water with tributaries from another state and adding the water to the Minnesota 2020 Section 303(d) list places an unreasonable burden on dischargers in Minnesota.

- Minnesota's existing Class 4A wild rice sulfate water quality standard has been demonstrated to be overly protective and not scientifically supported; as such is inappropriate to enforce.

- The EPA's assessment has overapplied the wild rice sulfate water quality standard both spatially and temporally.

- Assessment and listing of impaired waters in Minnesota under CWA Section 303(d) should be in accordance with the MPCA's *Guidance Manual for Assessing the Quality of Minnesota Surface Waters for Determination of Impairment*, which does not include methodology for assessing sulfate impairments associated with the wild rice beneficial use.

- The EPA Sulfate Impaired Waters Decision Document does not include the specific sulfate water quality data sets used to assess the waters and create the table in Appendix 2: Waters EPA is adding to the Minnesota 2020 303(d) List. Without access to the specific sulfate water quality data sets used by the EPA, it is not possible to assess the quality, appropriateness, or completeness of the data.

- As part of this CWA 303(d) process, both the EPA and MPCA consulted extensively with Tribal Governments and also considered information submitted by WaterLegacy; however, there was limited to no outreach to other stakeholders, including those with active discharge permits to these waters or the general public that use these waters. Additionally, the EPA has not made available the comments received during first public comment period or their responses to such comments; this lack of transparency makes it difficult for affected parties to provide meaningful comments to the EPA during this second public comment period.

Each of these issues associated with EPA's proposed listing of waters as impaired for sulfate is discussed in further detail below.

Waters Proposed as Impaired for Sulfate are not Designated as Wild Rice Waters

Minnesota Rules part 7050.0470 designates 24 waters as wild rice waters.[1] The EPA's review of the Minnesota 2014, 2016, and 2018 Section 303(d) lists appropriately only considered the wild rice sulfate

[1] Minnesota Rules part 7050.0460, subpart 3 and part 7050.0470, subpart 1

water quality standard for these 24 waters specifically designated as wild rice waters.[2] However, none of the three additional waters that the EPA is currently proposing to include on the Minnesota 2020 Section 303(d) list have been designated in Minnesota Rules part 7050.0470 as wild rice waters.

The MPCA's 2017 proposed rule amendments included a list of approximately 1,300 waters that were proposed to be designated for a wild rice beneficial use.[3] This proposed list of wild rice waters was specifically disapproved by an Administrative Law Judge (ALJ)[4] and the rule amendments were withdrawn.[5] The ALJ's criticism of the MPCA's 2017 proposed list of wild rice waters included that "in making its determinations as to which water bodies would be included in the list, the MPCA did not explicitly apply the standards it intends to use in future rulemakings to determine whether a water body should be added to the list of wild rice waters",[6] but rather "used a weight-of-evidence approach as it reviewed the corroborating evidence from sources to determine if the wild rice beneficial use exists or has existed in a water"[7] in which "many of the supporting documents used in the MPCA's review do not contain complete information about the density or acreage of wild rice".[8]

Despite the documented issues with the MPCA's 2017 proposed list of wild rice waters, both the EPA and the MPCA are now asserting that it is the minimum list of waters to which the wild rice beneficial use applies.[9] This is not an appropriate assertation as the list was disapproved by the ALJ and has not

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[2] EPA Sulfate Impaired Waters Decision Document, Part I.A

[3] MPCA *Proposed Rules Amending the Sulfate Water Quality Standard Applicable to Wild Rice and Identification of Wild Rice Waters*; Revisor's ID Number 4324 [hereafter referred to as MPCA's 2017 proposed rule amendments]

[4] Chief Administrative Law Judge's Order on Review of Rules, *In the Matter of the Proposed Rules of the Pollution Control Agency Amending the Sulfate Water Quality Standard Applicable to Wild Rice and Identification of Wild Rice Rivers*, April 12, 2018

[5] MPCA, Environmental Analysis and Outcomes Divisions, *Notice of Withdrawn Rules for Proposed Rules Amending the Sulfate Water Quality Standard Applicable to Wild Rice and Identification of Wild Rice Waters*; Revisor's ID Number 4324, April 26, 2018

[6] Chief Administrative Law Judge's Order on Review of Rules, *In the Matter of the Proposed Rules of the Pollution Control Agency Amending the Sulfate Water Quality Standard Applicable to Wild Rice and Identification of Wild Rice Rivers*, April 12, 2018

[7] Report of the Chief Administrative Law Judge, *In the Matter of the Proposed Rules of the Pollution Control Agency Amending the Sulfate Water Quality Standard Applicable to Wild Rice and Identification of Wild Rice Rivers*, January 9, 2018

[8] Report of the Chief Administrative Law Judge, *In the Matter of the Proposed Rules of the Pollution Control Agency Amending the Sulfate Water Quality Standard Applicable to Wild Rice and Identification of Wild Rice Rivers*, January 9, 2018

[9] EPA Sulfate Impaired Waters Decision Document, Parts I.B and II.A

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been adopted into Minnesota rule or submitted to the EPA for review as a revision to Minnesota's water quality standards.

Designation of beneficial uses should be conducted in accordance with CWA Section 303(c) and promulgated in Minnesota rule. It is not appropriate for the EPA and/or MPCA to circumvent these procedures and it is not appropriate for the EPA to assign and/or designate beneficial uses for waters as part of their review of a state's CWA Section 303(d) list. The EPA has previously indicated they agree that it is not appropriate to use the assessment process established in CWA 303(d) to displace the process for establishing and revising water quality standards outlined in CWA 303(c).[10]

Furthermore, it is critical for the designation of a wild rice beneficial use for a waterbody or segment of a waterbody to be undertaken on a case-by-case basis with a careful review of the evidence as to whether the wild rice beneficial use has been "actually attained in the water body on or after November 28, 1975".[11] For example: The EPA has included the lower portion of the Embarrass River from Esquagama Lake to St. Louis River (WID/AUID 04010201-B00, formerly part of WID/AUID 04010201-577) on their list of waters to be added to the Minnesota 2020 Section 303(d) list as impaired for sulfate.[12] This Embarrass River segment (WID/AUID 04010201-B00) was not included on the MPCA's 2017 proposed list of wild rice waters[13] and was not included on the *1854 Treaty Authority List of Wild Rice Waters*[14], in the Minnesota Department of Natural Resources' (MDNR's) *Wild Rice Harvester Survey Report*[15], or in the MDNR's *Natural Wild Rice in Minnesota – A Wild Rice Study*[16]. Furthermore, a wild rice survey completed in 2017 by Barr Engineering Co. found that wild rice is not present on this segment of the Embarrass River and is unlikely to be present in the future due to a lack of habitat conducive to wild rice growth.[17] This lower portion of the Embarrass River (WID/AUID 04010201-B00) is a clear example of a water included on the EPA's list of waters to be added to the Minnesota 2020 Section 303(d) list that should not be designated with a wild rice beneficial use and thus should not be

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[10] EPA *Decision Document for the Approval of Minnesota's 2014 Clean Water Act Section 303(d) List*, May 29, 2018, Appendix 2 (p. 3-4)

[11] 40 C.F.R. § 131.3(e)

[12] EPA Sulfate Impaired Waters Decision Document, Appendix 2

[13] EPA Sulfate Impaired Waters Decision Document, Appendix 1

[14] 1854 Treaty Authority *Wild Rice Waters in 1854 Ceded Territory*, March 3, 2021.

[15] Minnesota Department of Natural Resources (MDNR) *Minnesota Natural Wild Rice Harvester Survey: A Study of Harvesters' Activities and Opinions*, December 2007

[16] MDNR *Natural Wild Rice in Minnesota, A Wild Rice Study Document Submitted to the Minnesota Legislature by the Minnesota Department of Natural Resources*, February 15, 2008

[17] ArcelorMittal Minorca, Letter to The Honorable Judge LauraSue Schlatter, *Re: Comments on Proposed Rules Amending the Sulfate Water Quality Standard Applicable to Wild Rice and Identification of Wild Rice Waters (OAH Docket No. 80-9003-34519)*, November 22, 2017, Attachment A, Comment 1

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listed as impaired for sulfate. This example calls into question the entire list of water segments that the EPA is asserting the wild rice beneficial use applies to. Designation or modification of beneficial uses is required to follow a structured and scientific process to ensure that beneficial uses assigned to a particular waterbody are appropriate for that waterbody and are based on sound evidence and data; this cannot be accomplished under the scope of a CWA 303(d) listing review.

A water cannot be listed as impaired for a water quality standard associated with a beneficial use that has not been designated for the water. Thus, because the three additional waters the EPA is proposing to add to the Minnesota 2020 Section 303(d) list have not been officially designated as wild rice waters, it is not appropriate to list them as impaired for sulfate.

St. Louis River Estuary is an Interstate Water

The St. Louis River Estuary is an interstate water bordering Minnesota and Wisconsin. This leads to several concerns associated with the proposed inclusion of the St. Louis River Estuary on the Minnesota 2020 Section 303(d) list.

First, numerous tributaries and dischargers contribute to the quantity and quality of the water in the St. Louis River Estuary. Many of these discharges are beyond the control of the MPCA because they are located outside of their jurisdiction. This will result in undue burden on dischargers within the state of Minnesota. They will be solely responsible for the quality of the water within the St. Louis River Estuary, regardless of their contributions of pollutants. In essence, Minnesota dischargers could potentially be penalized for pollution caused by dischargers in Wisconsin. This is unreasonable and unfair.

Second, the EPA listed a AUID of 69-1291-04 for the St. Louis River Estuary in Appendix 2a: Waters EPA is adding to the Minnesota 2020 303(d) List (August 31, 2021). However, that AUID is not listed in the data provided in Appendix 3 and Appendix 4 of the EPA Sulfate Impaired Waters Decision Document. Attempts to identify the sampling locations associate with the 26 observations noted on Appendix 2a resulted in additional questions regarding the validity of the data. According to the MPCA's lakes and streams water quality dashboard[18], there are four former identification numbers associated with this stream segment, only three of which are included in EPA's Appendix 3 and Appendix 4 data: AUIDs 04010201-513, 04010201-532, and 04010201-533. In turn, these former AUIDs are associated with five sampling locations. One of these sampling locations, S007-507, is marked on MPCA's lakes and streams water quality dashboard as being near Fairfax, MN, approximately 190 miles southwest of the St. Louis River Estuary. Another sampling location, S007-512, appears to be located outside of the AUID segment according to MPCA's lakes and streams water quality dashboard; while a third, S007-516, appears to be located within the border of the state of Wisconsin. As demonstrated, EPA has not adequately identified

[18] MPCA's lakes and streams water quality dashboard was accessed at the follow web address: https://webapp.pca.state.mn.us/surface-water/impairment/69-1291-04

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the exact sampling locations of the data used in their determination. This leads to the question of the validity of the data. Likewise, data from another state should not be considered in the impairment determination as this furthers the concern that Minnesota dischargers are expected to be responsible the discharges and quality of water from neighboring states.

Third, the Chamber is concerned with future implementation of TMDLs associated with the proposed inclusion of the St. Louis River Estuary on the Minnesota 2020 303(d) list. We disagree that Minnesota dischargers will potentially be required to meet additional restrictions associated with the impairment listing while Wisconsin dischargers will not be required to do anything. Again, it is unreasonable for EPA to expect that Minnesota dischargers bear the burden of improving water quality when there are contributors from beyond the jurisdictional border of the state.

Minnesota's Overly Protective Existing Wild Rice Sulfate Water Quality Standard is Inappropriate to Enforce

Minnesota's existing Class 4A 10 mg/L sulfate water quality standard "applicable to water used for production of wild rice during periods when the rice may be susceptible to damage from high sulfate levels"[19] has been demonstrated to be overly protective and not scientifically supported. Standard toxicity testing, including that conducted by Dr. John Pastor[20] and Fort Environmental Labs[21] have proven that sulfate, in and of itself, does not impede the growth of wild rice below concentrations of 2,500 mg/L. As such, it is inappropriate to enforce this existing standard. The inappropriateness of enforcing this standard was recognized by the Minnesota State Legislature in 2015/2016 when they decided "the agency shall not list waters containing natural beds of wild rice as impaired for sulfate under section 303(d) of the federal Clean Water Act, United States Code, title 33, section 1313" until an updated rulemaking takes effect.[22]

The inappropriateness of the existing 10 mg/L numeric sulfate standard was also recognized by the MPCA when they proposed in 2017 to replace it with "an equation that translates a protective concentration of sulfide in the sediment porewater to a calculated sulfate concentration in the overlying

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[19] Minnesota Rules part 7050.0224, subpart 2

[20] Pastor, J., *Effects of enhanced sulfate and sulfide concentrations on wild rice germination and growth: results from a hydroponics experiment*, December 2013

[21] Fort, D.J., Mathis, M.B., Walker, R., Tuominen, L.K., Hansel, M., Hall, S., Richards, R., Grattan, S.R., and Anderson, K., *Toxicity of Sulfate and Chloride to Early Life-Stages of Wild Rice (Zizania Palustris)*, Journal of Environmental Toxicology and Chemistry, September 2014

[22] Wild Rice Water Quality Standards, Chapter 4 – S.F. No. 5 (2015, 1st Special Session) (Subsection (a)(2)); Sulfate Effluent Compliance, Ch. 165, S.F. No. 3376 (2016, Regular Session)

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water that will be protective of wild rice in that particular wild rice water".[23] The MPCA stated that "because of the relationship between sulfate in the water, sulfide in the porewater, and iron and carbon in the sediment, an equation is the most accurate approach to protecting wild rice".[24] The MPCA also noted that "wild rice populations had been observed growing in waters significantly greater than 10 mg/L".[25]

The existing 10 mg/L sulfate standard also fails to consider that there are many other factors that impact wild rice. The MPCA has previously acknowledged that sulfate is not the only factor that impacts wild rice growth and health and that "water clarity, water level, and many other factors affect wild rice presence and health".[26] The MPCA has also previously acknowledged "the variability of the conditions for wild rice growth", the existence of "other factors that limit the growth of wild rice (e.g. it will not grow where water levels vary too widely)", and the complex relationships between "the variables affecting wild rice presence and growth".[27] Due to the many complex factors that influence and impact wild rice, the existing standard focused solely on sulfate concentrations is often overly protective and thus inappropriate to enforce.

Overapplication of the Wild Rice Sulfate Water Quality Standard

In the EPA's assessment, they have overapplied the wild rice sulfate water quality standard both spatially and temporally. The Minnesota Class 4A sulfate water quality standard is specifically "applicable to water used for production of wild rice during periods when the rice may be susceptible to damage from high sulfate levels".[28]

The current sulfate water quality standard is only applicable during a portion of the year (specifically "during periods when the rice may be susceptible to damage by high sulfate levels").[29] Wild rice is an annual plant, which germinates in May (+/- 30 days) and senesces in September. Seeds which are not harvested fall to the sediment and lie dormant in the sediment, to germinate the next spring. Several studies have indicated that exceedingly high levels of sulfide would need to be present to impact wild

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[23] MPCA *Statement of Need and Reasonableness, Amendment of the Sulfate Water Quality Standard Applicable to Wild Rice and Identification of Wild Rice Waters, Minn. R. Chapters 7050 and 7053*, July 2017 [hereafter referred to as MPCA 2017 proposed rule SONAR], Part 1.D

[24] MPCA 2017 proposed rule SONAR, Part 1.D

[25] MPCA 2017 proposed rule SONAR, Part 6.E.4

[26] MPCA 2017 proposed rule SONAR, Part 10

[27] MPCA 2017 proposed rule SONAR, Part 6.D.1

[28] Minnesota Rules part 7050.0224, subpart 2

[29] Minnesota Rules part 7050.0224, subpart 2

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rice seeds and subsequent germination and emergence.[30,31] For these reasons, the current wild rice sulfate standard is a seasonal standard, applicable only during the growing season. In the Mesabi Nugget NPDES/SDS Permit MN0067687 (issued December 28, 2012)[32], the MPCA set a precedent for applying the current sulfate water quality standard seasonally when they "concluded that the 10 mg/L sulfate standard is applicable to portions of the Partridge River used for wild rice production April 1 through August 31".[33] As the standard is not applicable year-round, waters should not be designated as impaired year-round.

Minnesota Class 4A establishes water quality applicable to agricultural waters. Specifically, the quality of Minnesota Class 4A waters is required to be "such as to permit their use for irrigation without significant damage or adverse effects upon any crops or vegetation usually grown in the waters or area, including truck garden crops".[34] This combined with the wild rice standard being specifically "applicable to water used for production of wild rice" indicates that the standard should only apply to wild rice stands of a size and density suitable to support wild rice harvesting. The 24 wild rice waters currently designated in Minnesota Rules part 7050.0470 are listed as such because they have long histories of containing harvestable crops of wild rice.

Typically, only specific portions of a water segment or lake include habitat capable of supporting wild rice. Thus, it is important to consider whether appropriate wild rice habitat exists and where specifically it exists as part of determining whether the sulfate water quality standard is applicable. Based on presence or absence of appropriate habitat [such as appropriate hydrology (e.g., flow, water level), geomorphology (e.g., substrate, bank stability), sediment chemistry, energy sources (e.g., sunlight, nutrients), and other macrophyte populations], it is often inappropriate to apply the sulfate water quality standard to entire water segments or entire lakes. Where there is no wild rice habitat, there should be no sulfate impairment.

Some of the 30 waters the EPA is proposing to add to the Minnesota 2020 Section 303(d) list include segments with no wild rice or wild rice habitat. One example is the previously discussed lower segment

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[30] Pastor, J., *Effects of enhanced sulfate and sulfide concentrations on wild rice germination and growth: results from a hydroponics experiment*, December 2013

[31] Fort Environmental Labs, *Definitive Hydroponics-Based Wild Rice (Zizania palustris) Sulfide Toxicity Testing* (ENVI101-00352), July 2015

[32] Mesabi Nugget NPDES/SDS Permit MN0067687 (issued December 28, 2012 to Mesabi Nugget Delaware, LLC), Chapter 1, Part 6.1

[33] MPCA *Mesabi Nugget Delaware, LLC - Request for Approval of Findings of Fact, Conclusions of Law, and Order and Authorization to Grant a Variance and to Reissue National Pollutant Discharge Elimination System/State Disposal System Permit MN0067687*, October 23, 2012, Part II.B.ii

[34] Minnesota Rules part 7050.0224, subpart 2

of the Embarrass River from Esquagama Lake to St. Louis River (WID/AUID 04010201-B00). Another example is portions of Second Creek (WID/AUID 04010201-952). The EPA has included Second Creek (WID/AUID 04010201-952) on their list of waters to be added to the Minnesota 2020 Section 303(d) list as impaired for sulfate.[35] Wild rice surveys of Second Creek were conducted by Barr Engineering Co. annually from 2013 through 2018. The majority of the 2.5 mile most downstream segment of Second Creek contains no wild rice stands. There is typically a small and sparse area of wild rice approximately 2.25 miles upstream of Second Creek's confluence with the Partridge River (not adequate size or density for harvesting of wild rice) and a larger and dense area of wild rice at the downstream end of Second Creek immediately prior to its confluence with Partridge River.[36] Because the majority of this segment of Second Creek has not been documented to contain wild rice stands, it is not appropriate to apply the wild rice beneficial use and associated sulfate water quality standard to the entire segment of the creek. The beneficial use and associated water quality standard should only be applied to the portions of the creek where wild rice has been observed.

It is important to note that many factors impact wild rice abundance other than sulfate. These factors interrelate with whether or not there is appropriate habitat for wild rice. The MPCA asserted during the 2017 proposed rule amendment process (prior to withdrawal of the amendments) that it is not the concentration of sulfate in the water that directly impacts wild rice but rather the concentration of sulfide in the sediment pore water which is depended on both the concentration of sulfate in the overlying water and the concentrations of carbon and iron in the sediment.[37] The MPCA has also previously recognized that many other factors also impact wild rice growth and health, such as water clarity, water level, weather, habitat, invasive species, etc.[38] In addition to these factors, other factors known to affect wild rice abundance include changes in natural hydrology, water level fluctuations, competitive (native) species, human developments and impacts (e.g., shoreline development, boat

[35] EPA Sulfate Impaired Waters Decision Document, Appendix 2

[36] Barr Engineering Co., *Wild Rice Stand Variability Study*, Prepared for PolyMet Mining, Inc., May 2019

[37] MPCA 2017 proposed rule SONAR, Part 1.B

[38] MPCA 2017 proposed rule SONAR, Parts 10 and 10.E

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traffic), disease and diminishing natural generic diversity, climate change, and water level and stream channel alterations due to beaver dam presence and subsequent removal.[39,40,41,42,43,44,45,46,47]
As examples:

- There is a significant difference in the abundance of wild rice between the upper and lower portions of the St. Louis, Partridge, and Embarrass Rivers. The transitions between the upper and lower portions of these rivers has been found to correspond to changes in their physical characteristics (morphology). Wild rice is present in the river reaches where water-level bounce appears mitigated by river features and absent where water-level bounce is not as constrained.[48]
- A study was undertaken for Little Sandy Lake and Sandy Lake to evaluate factors that have or are influencing wild rice growth and identify opportunities to restore wild rice.[49] Multiple adverse influences on wild rice growth and development were identified: 1) general lack of a viable wild rice seed bank in the sediment of the lakes; 2) water depth and fluctuations throughout the lake system is not conducive to wild rice growth and development; and 3) competing aquatic vegetation has become established in large areas of the lake system. A fourth

[39] Wisconsin Department of Natural Resources, *Wetland Restoration Handbook for Wisconsin Landowners* (Chapter 12), 2010
[40] Wisconsin Agricultural Extension Service, *Wisconsin Biology Technical Note 4, Wild Rice Seeding Guidelines,* undated
[41] MDNR, *Natural Wild Rice in Minnesota - A Wild Rice Study document submitted to the Minnesota Legislature,* February 2008
[42] MDNR, *Managing Minnesota's Shallow Lakes for Waterfowl and Wildlife,* December 2010
[43] MDNR, *A Handbook for Collecting Vegetation Plot Data in Minnesota: The Releve Method,* 2007
[44] Poff, N.L., Brinson, M. and Day, J.W., *Aquatic Ecosystems and Global Climate Change,* 2002
[45] Walker, R.D., Pastor, J. and Dewey, B.W., *Effects of wild rice (Zizania palustris) straw on biomass and seed production in northern Minnesota,* Canadian Journal of Botany (84, pp. 1019-1024), 2006
[46] Walker, R.D., Pastor, J. and Dewey, B.W., *Litter quantity and nitrogen immobilization cause oscillations in productivity of wild rice (Zizania palustris) in northern Minnesota,* Ecosystems (13, p. 485:498), 2010
[47] Vogt, D., *Wild Rice Monitoring and Abundance in the 1854 Ceded Territory (1998-2014),* 1854 Treaty Authority, 2014
[48] Poly Met Mining Inc., *Influence of Landscape on Wild Rice Occurrence in the Upper St. Louis River, Partridge River, Embarrass River, Wyman Creek, and Second Creek,* March 2014
[49] Northeast Technical Services, Inc., *U.S. Steel Minntac Twin Lakes Wild Rice Restoration Opportunities Plan Final Report,* February 28, 2019

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likely adverse influence on wild rice growth and development in the lakes system is natural site-specific sediment conditions unrelated to surface water or sediment pore water characteristics.

As demonstrated by these examples, there are multiple factors that should be considered before applying the wild rice sulfate standard to a water segment or lake. Such considerations should be part of any assessment methodology used for listing of waters as impaired for wild rice sulfate.

Assessment and Listing of Impaired Waters should be in accordance with the MPCA 2020 Assessment and Listing Document

Assessment and listing of impaired waters in Minnesota under CWA Section 303(d) should be in accordance with the MPCA's *Guidance Manual for Assessing the Quality of Minnesota Surface Waters for Determination of Impairment* as developed for the 2020 assessment and listing cycle (MPCA 2020 Assessment and Listing Document).[50] It is our understanding that this document should have been reviewed and approved by the EPA.

The MPCA 2020 Assessment and Listing Document does not include methodology for assessing sulfate impairments associated with the wild rice beneficial use. The EPA Sulfate Impaired Waters Decision Document describes the methodology used by the EPA to assess waters for sulfate impairment[51]; however, it is improper to use this methodology as it was not included in the approved MPCA 2020 Assessment and Listing Document.

Furthermore, the methodology used by EPA presents an inconsistency with determining sulfate concentrations. In one scenario, values are averaged while in another, the maximum value is used. Although this inconsistency is an issue, the main concern is the determination to use a maximum sample value to represent sulfate concentrations in waterbodies. This approach could be capturing anomalies in the waterbody with respect to sulfate concentrations. EPA should explain why they used the maximum concentration value observed in certain scenarios, beyond citing a March 15th communication from MPCA (which itself does not provide sufficient justification). In any case, EPA should seek to characterize the average daily conditions of the waterbody when determining appropriate sulfate concentrations for waterbody segments, which will be more indicative of whether sulfate concentration will impact wild rice habitat.

EPA Decision Document Does Not Include Sulfate Water Quality Data Sets Used to Assess Waters

The EPA Sulfate Impaired Waters Decision Document does not include the specific sulfate water quality data sets used to assess the waters and create the table in Appendix 2a: Waters EPA is adding to the

[50] MPCA *Guidance Manual for Assessing the Quality of Minnesota Surface Waters for Determination of Impairment: 305(b) Report and 303(d) List*, MPCA Document Number: wq-iw1-04k, February 2021

[51] EPA Sulfate Impaired Waters Decision Document, Part III.A

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Minnesota 2020 303(d) List (August 31, 2021). Sulfate water quality data sets received from others are included in Appendix 3 (received from Tribes) and Appendix 4 (received from WaterLegacy); however, based on the narrative in the EPA Sulfate Impaired Waters Decision Document[52] and comparison of the Appendices 3 and 4 data sets with the data summaries presented in the Appendix 2a table, it appears that the EPA also used other data that are not included with the EPA Sulfate Impaired Waters Decision Document.

Without access to the specific sulfate water quality data sets used by the EPA, it is not possible to assess the quality, appropriateness, or completeness of the data. It falls upon the stakeholders to attempt to reconstruct the data analysis undertaken by the EPA without certainty that they are considering the same data. If the EPA is confident in their assessment of these waters, it would be prudent for them to make the associated data sets available for scrutiny.

Furthermore, in limiting access to full and complete sets of data, EPA also failed to provide the equations used to calculate sulfate concentrations. This exacerbates stakeholders' inability to replicate the methodology. EPA should provide the full set of equations and calculations along with the full and complete data sets.

Transparency of the 303(d) Process

As part of this CWA 303(d) process, both the EPA and MPCA consulted extensively with Tribal Governments[53] and also consulted with and considered information submitted by WaterLegacy[54]; however, there was limited to no outreach to other stakeholders. The listing of Minnesota waterbodies as impaired for sulfate will impact many other stakeholders that have active discharge permits to these waters or otherwise use these waters, including municipalities, businesses (including those represented by the Minnesota Chamber of Commerce), and the general public. We respectfully request that both agencies undertake more transparent and equitable consultation with potentially effected stakeholders.

Additionally, the EPA has not made available the comments received during first public comment period (April 29, 2021 to June 30, 2021) or their responses to such comments.[55] It is difficult for affected parties to provide meaningful comments to the EPA during this second public comment period when the EPA

[52] EPA Sulfate Impaired Waters Decision Document, Part III.A

[53] EPA Sulfate Impaired Waters Decision Document, Part IV

[54] EPA Sulfate Impaired Waters Decision Document, Part V

[55] The Chamber requested these comments from the EPA (Mr. Paul Proto) on September 10, 2021; however, Mr. Proto responded on September 14, 2021 that "EPA is drafting responses to comments presented in the public comment period of April 29, 2021 to June 30, 2021 and will share those responses upon taking a final action on the Minnesota 2020 303(d) List."

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has not shared: 1) the specific comments that lead to them proposing to add these three additional waters; and 2) their response to the affected parties' previous comments on the overarching issues that apply to all or the majority of WQLS the EPA is proposing to list. We also respectively request that the EPA undertake a more transparent process that would allow for more meaningful stakeholder engagement and public comments.

The Chamber urges the EPA to reconsider their proposed listing of waters as impaired for sulfate. The current proposal is inconsistent with the Clean Water Act in that it applies a water quality standard to waters that have not been officially designated with the associated beneficial use; implements an impairment on an interstate water while placing an unreasonable burden on dischargers Minnesota; enforces a sulfate water quality standard that has been demonstrated to be overly protective and not scientifically supported; overapplies the wild rice sulfate water quality standard both spatially and temporally; does not follow approved methodology for assessment and listing of impaired waters in Minnesota; and has lacked transparency by not including the specific sulfate water quality data sets used to assess the waters and including limited to no outreach to stakeholders other than Tribal Governments.

Thank you for the opportunity to provide comments on Appendix 2a: Waters EPA is adding to the Minnesota 2020 303(d) List (August 31, 2021) of the EPA *Decision Document Regarding the Sulfate Impaired Waters EPA is Adding to the Minnesota 2020 Clean Water Act Section 303(d) List.*

Please do not hesitate to contact me for clarification or discussion at 651-292-4668 or tkwilas@mnchamber.com.

Respectfully submitted,

Tony Kwilas
Director, Environmental Policy
Minnesota Chamber of Commerce

Enclosure

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CLEVELAND-CLIFFS INC.
200 Public Square, Suite 3300, Cleveland, OH 44114
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October 1, 2021

Mr. Paul Proto
United State Environmental Protection Agency, Region 5
77 West Jackson Boulevard
Chicago, IL 60604
Via Email - Proto.paul@epa.gov

Re: Cleveland-Cliffs' Comments on EPA's Proposed Additions to Minnesota's 2020 Impaired Waters List

Dear Mr. Proto:

Thank you for the opportunity to submit comments regarding EPA's September 1, 2021, announcement of its intention to add three water bodies to its original proposed 2020 List of Sulfate Impaired Waters under Clean Water Act Section (303d) for Minnesota. As previously stated in our June 30, 2021, comment letter regarding EPA's original proposed 2020 listing of impaired waters, Cleveland-Cliffs (Cliffs) operates iron mining facilities in northern Minnesota with NPDES discharge permits. Some of our facilities discharge to waters which are subject to the original and recently expanded Minnesota impaired water listing.

While we would like to restate all of the significant concerns we raised in our June 30th comment letter, we are focusing our comments today on the following topics as they relate specifically to the recently expanded list:

- Minnesota has not designated any waters subject to the MPCA's Class 4A 10 mg/L standard for sulfates, Minn. R. 7050.0224, subp. 2 (the "Sulfate Standard"),
- Perch Lake has not been determined to be a jurisdictional Water of the United States (WOTUS), and
- EPA's failure to make available the dataset upon which EPA is basing its proposed listing of the St. Louis River Estuary denies stakeholders, including Cliffs, a reasonable, meaningful opportunity to evaluate EPA's proposed actions.

These topics are discussed in additional detail below.

A. The State of Minnesota Has Not Designated Any Waters As Subject to the Numeric Sulfate Standard; Until that Changes, EPA Has No Authority Under Section 303(d) to Unilaterally Designate the Waters to Which the Standard Applies.

Cliffs respectfully reiterates its prior comments, submitted to EPA on June 30, 2021, outlining the reasons why EPA lacks legal authority under Section 303(d) to designate the Minnesota waters to which the Sulfate Standard applies, including the three additional waters EPA proposes to designate: Perch Lake (WID 69-0688-00), Sturgeon Lake (WID 25-0017-01) and St. Louis River estuary segment (WID 69-1291-04). In summary, Cliffs' comments, which are incorporated herein by reference, highlighted the following:

1. EPA's Decision to Designate Waters Subject to the Sulfate Standard Is Inconsistent With Congress's Careful Balancing of Federal and State Power in the CWA: A fundamental principle of the Clean Water Act (CWA), expressed in 33 U.S.C. s 1251(b), is that primary authority for establishing water quality standards rests with the states. *See Mississippi Comm'n on Nat. Res. v. Costle*, 625 F.2d 1269, 1275 (5th Cir. 1980) (noting Congressional intent that the CWA "not place in the hands of a federal administrator absolute power over zoning watershed areas," because "[t]he varied topographies and climates in the country call for varied water quality solutions"). Federal authority under the CWA is especially limited when, as in the current situation, the issue concerns (a) the designation of which waters will be subject to state water quality standards (WQS), and (b) the underlying beneficial use is not among the CWA section 101(a)(2) "fishable/swimmable" uses that states must protect in their waters. *See* 25 F. 2d at 1275 (holding that "the specification of a waterway as one for fishing, swimming, or public water supply is *closely tied to the zoning power Congress wanted left with the states*" (emphasis added)). The nature and scope of the wild rice irrigation use (WRIU) protected by the Sulfate Standard, as well as the waters in which the WRIU must be protected, are issues that must be determined by the State of Minnesota, not the federal government.

2. The Plain Language of Section 303(d) Does Not Authorize EPA to Designate the Waters to Which the Sulfate Standard Is Applicable. Cliffs' June 30, 2021, comments also explained why EPA does not have authority to designate waters as part of the Section 303(d) process. Under Section 303(d)(1)(A) and (C), states must identify waters for which effluent limitations are not "stringent enough to implement any water quality standards *applicable to such waters*" and establish TMDLs for these impaired waters (emphasis added). The phrase "applicable to such waters" makes clear that the process required by this statute to identify impaired waters is only relevant when and if a prior decision has been made that the standard in question is "applicable." This only makes sense: a water body cannot be determined to be impaired for a water quality standard under section 303(d) if the water body is not subject to the standard in the first place. Section 303(d) does not

authorize EPA to take the precedent step of designating which waters are subject to which standards, as the agency is now attempting to do with the Sulfate Standard.[1]

3. EPA, Like Many Stakeholders, May Be Disappointed With the Pace of Minnesota's Process to Determine Which State Waters Should Be Required to Meet the Sulfate Standard, But That Disappointment Does Not Justify EPA Interfering With Minnesota's Proper Exercise of Its Zoning Authority. Finally, Cliffs emphasized in its June 30, 2021, comments, that while Minnesota's process of defining the scope of the WRIU and the waters to which the Sulfate Standard applies has been slow, it is proceeding at an appropriate pace, given the complex factual, legal environmental, historical and cultural issues at stake. EPA should let that process—one Congress fundamentally entrusted to states—play out. EPA's current attempt to override state authority and take action based on cherry-picked findings from an abandoned rulemaking process is both arbitrary and unfair to those parties who advocated for different positions in the rulemaking process (positions that might had prevailed had the rule been finalized), but which EPA has chosen not to embrace.[2]

For these reasons, as more fully explained in Cliffs' June 30, 2021, comment letter, Cliffs respectfully requests EPA to abandon its plan to list any waters impaired for the Sulfate Standard, including Perch Lake, and to allow Minnesota to complete the task that Congress reserved for the states when it adopted the CWA—the determination of which waters are subject to the Standard.

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[1] That Section 303(d) does not authorize EPA to override state designation decisions is made clear by the fact that Congress created a completely separate process for EPA review (and certain situations, replacement) of new or revised state WQS in CWA Section 303(c). (Although, as articulated in Cliff's June 30, 2021, comment letter, even if EPA was proceeding under that statute, it is doubtful EPA could preempt Minnesota's process of determining which state waters will be protected for a non–Section 101(a)(2) use such as the WRIU.)

[2] EPA's unilateral determination to accept some aspects of the abandoned rulemaking while rejecting others is an affront to the administrative due-process protections instituted by the Minnesota Legislature in the Minnesota Administrative Procedure Act and its implementing rules. First, and most obvious, the rulemaking was and is incomplete because MPCA withdrew the rule before it was finalized; it is thus inappropriate for EPA to implement portions of the withdrawn rulemaking as if they were duly adopted Minnesota law. It is also important to realize that when MPCA abandoned the wild rice rulemaking, the rulemaking process was far from complete, notwithstanding the fact that the ALJ had issued her final report. For example, under Minn. R. 1400.2240, once MPCA receives an ALJ's final report, there are several remaining administrative processes that MPCA can implement which lead to various final outcomes. For example, MPCA could have, among other things, (a) approved the rule, (b) approved the rule with changes (subject to a "substantially different" review by the Chief ALJ), (c) disapproved the rule, or (d) adopted some but not all of the rule, with or without starting a new rulemaking for the rejected parts of the rule. Further, even once these administrative processes have been exhausted, interested parties would have had the right to challenge the rule in court. In short, the ALJ's report and proposed (but withdrawn) wild-rice rule are not law in Minnesota and the rulemaking process was incomplete when MPCA withdrew the rulemaking. Thus, when EPA unilaterally decided to use the draft list of wild-rice waters but not implement the proposed equation based standard, or when EPA decided to list as impaired the lower reach of the Embarrass River and Second Creek when MPCA clearly did not intend to apply the Sulfate Standard to either, EPA is running roughshod over Minnesota's rulemaking procedures, illegally enforcing unadopted rules, and acting arbitrarily.

B. EPA Lacks Authority Under the CWA to List Perch Lake as Impaired for the Sulfate Standard Because Perch Lake Has Not Been Designated as a "Water of the United States" (WOTUS).

In addition to EPA's general lack of authority, outlined above, to designate waters under Section 303(d), EPA also lacks authority to add Perch Lake to the 303(d) list of waters for which effluent limits are not sufficient to meet WQS. This is because it is unclear whether Perch Lake is a WOTUS, and unless and until Perch Lake has been determined to be a WOTUS by, e.g., a jurisdictional determination by the US Army Corps of Engineers, EPA should refrain from including the lake on Minnesota's Section 303(d) list.[3]

Whether Perch Lake falls within the scope of "navigable waters"[4] as defined by EPA pre-2015 and interpreted by the United States Supreme Court is unclear and yet to be determined. Perch Lake is not a traditional navigable water; to the contrary it is a wholly intrastate water that is not currently used, was not used in the past, and is not susceptible to use in the future in interstate or foreign commerce. *See Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers*, 531 U.S. 159, 166 (2001) (declining to find CWA jurisdiction over ponds in an abandoned sand-and-gravel mine, which the court described as "non-navigable, isolated, intrastate waters"). In addition, Perch Lake has not been documented through the jurisdictional determination process to possess a "significant nexus" to waters that are or were "navigable." *See Rapanos v. United States*, 547 U.S. 715, 719 (2006) (Justice Kennedy's concurring opinion). Perch Lake is miles away from any traditional navigable water body.

C. Lack of Transparency Regarding Data Used to Assess the Listing of the Interstate St. Louis River Estuary

EPA has not made available the dataset which serves as the basis for listing the St. Louis River Estuary as an Impaired Water. The inability to review the accuracy, completeness and appropriateness of the dataset does not provide stakeholders, like Cliffs, a reasonable, meaningful opportunity to evaluate EPA's proposed actions.

EPA listed a AUID of 69-1291-04 for the St. Louis River Estuary in *Appendix 2a: Waters EPA is adding to the Minnesota 2020 303(d) List* (August 31, 2021). However, that AUID is not listed in the data provided in Appendix 3 and Appendix 4 of the EPA Sulfate Impaired Waters Decision Document. Attempts to identify the sampling locations associated with the 26 observations noted

[3] Waters included on the Section 303(d) list must be WOTUS. *See* 33 U.S.C. § 1315(b), CWA Section 305(b) (requiring states to develop a master list—which is the source for the 303(d) list—providing "a description of the water quality of all *navigable waters* in such State during the preceding year..." (emphasis added) and 33 U.S.C. § 1315(e), CWA Section 303(e) (requiring states to include in their continual planning process (CPP) documents submitted to EPA "plans for all *navigable waters within such State*," which include, "total maximum daily load for pollutants in accordance with subsection [303](d) of this section..." (emphasis added). *See also*, Memorandum from Diane Regas, Director EPA Office of Wetlands, Oceans and Watersheds, to EPA Water Division Directors Regions 1 to 10, re "Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water" July 29, 2005) at p. A-2 ("As described in this guidance, all waters in the state that are '*waters of the United States*' (as defined in 40 CFR 122.2) should be assessed and reported on." (Emphasis added.)).

[4] The CWA defines "navigable waters" as "waters of the United States." 33 U.S.C.S. § 1362(7).

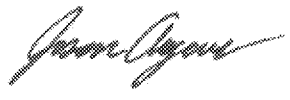
on Appendix 2a resulted in additional questions regarding the validity of the data. According to the MPCA's lakes and streams water quality dashboard[5], there are four former identification numbers associated with this stream segment, only three of which are included in EPA's Appendix 3 and Appendix 4 data: AUIDs 04010201-513, 04010201-532, and 04010201-533. In turn, these former AUIDs are associated with five sampling locations. One of these sampling locations, S007-507, is marked on MPCA's lakes and streams water quality dashboard as being near Fairfax, MN, approximately 190 miles southwest of the St. Louis River Estuary. Another sampling location, S007-512, appears to be located outside of the AUID segment according to MPCA's lakes and streams water quality dashboard; while a third, S007-516, appears to be located within the border of the state of Wisconsin. As demonstrated, EPA has not adequately identified the sampling locations of the data used in their determination.

Finally, while we do not believe that EPA should finalize a 303(d) listing based on the Minnesota Sulfate Standard, if EPA does proceed, the development and implementation of a TMDL for the St. Louis River Estuary must be properly coordinated between Minnesota, Wisconsin and affected dischargers.

Conclusion

For the reasons discussed above and in our June 30, 2021, comment letter, Cliffs requests EPA to reconsider its proposed listing of waters as impaired for sulfate in Minnesota. Thank you for the opportunity to submit these comments.

Sincerely,



Jason Aagenes
Director – Environmental Permitting and Regulatory, Mining

Cc: [redacted]

[5] MPCA's lakes and streams water quality dashboard was accessed at the follow web address: https://webapp.pca.state.mn.us/surface-water/impairment/69-1291-04